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OF THE PROVINCE OF

BRITISH COLUMBIA

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VOLUME ONE

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ANNUAL REPORT

OF THE

MINISTER OF MINES

FOR THE

YEAR ENDED 31ST DECEMBER

1926

BEING AN ACCOUNT OF

MINING OPERATIONS FOR GOLD, COAL, ETC.

IN THE

PROVINCE OF BRITISH COLUMBIA.

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

To His Honour ROBERT RANDOLPH BRUCE,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The Annual Report of the Provincial Mineralogist upon the Mining Industry of the Province for the year 1926 is herewith respectfully submitted.

WILLIAM SLOAN,

Minister of Mines.

Minister of Mines Office,

February 15th, 1927.

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Deeks Gravel and Rock Company, Ltd.

To the Honourable William Sloan,

Minister of Mines.

SIR,—I have the honour to submit herewith my Annual Report on the Mining Industry of the Province for the year ended December 31st, 1926.

The statistical tables give the total mineral production of the Province to date and show by Districts and Divisions the output of the various metals and minerals for the year 1926, and comparative figures for previous years.

The reports of the Resident Mining Engineers give much information about the progress of mining, development, and prospecting throughout the Province. The reports of the Inspectors of Mines cover fully coal-mining in British Columbia.

I have the honour to be,

Sir,

Your obedient servant,

JOHN D. GALLOWAY,

Provincial Mineralogist.

Bureau of Mines, Victoria, B.C.,

February 15th, 1927.

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STATISTICAL REVIEW OF THE MINERAL INDUSTRY OF BRITISH COLUMBIA IN 1926.

By John D. Galloway, Provincial Mineralogist.

GENERAL SUMMARY.

The mineral industry of British Columbia in 1926 again surpassed all previous records in production. With an output valued at $67,188,842, gross profits approximating 25 per cent. of th gross value, and dividends of nearly $10,000,000, the year may be characterized as the most satisfactory and successful one in the history of mining in the Province.

With the exception of coal and gold, increased outputs of metals and minerals were made in all branches of the industry. The value shows an increase of $5,696,600, or 9.2 per cent., as compared with the 1925 valuation of $61,492,242, which was the previous high record year for the Province.

Since 1921—the year of an acute depression in the metal markets of the world—British Columbia has made impressive progress in increasing its mineral production each year. The value of the output for 1926 was nearly 2½ times that of 1921 and the yearly increase has been nearly $8,000,000 a year. The considerable increase in the value of the mineral production for 1926 has been made notwithstanding lowered average metal prices as compared with 1925. This shows a very satisfactory condition in the industry, with production steadily increasing regardless of fluctuations in the metal markets.

As would be expected, the tonnage of ore mined and treated in the Province also shows a considerable increase; 4,775,073 tons of ore was produced, as compared with 3,849,269 tons in 1925.

Since mining commenced in the Province in 1852 the total mineral production has been $988,108,470. It is interesting to note as showing the way in which mining has increased in recent years that over 50 per cent. of this total has been produced in the last twelve years.

A feature worthy of notice is the fact that British Columbia now is the leading silver-producing Province of Canada, having made a larger output in 1926 than Ontario, which for many years has been in the lead. British Columbia also continues to be the largest producer in Canada of lead, copper, and zinc.

The mineral industry of British Columbia, in so far as production is concerned, may be divided into three classes—metal-mining, coal-mining, and the production of structural materials and miscellaneous minerals. Of these, the first is by far the most important, with a production for 1926 valued at $51,863,534. This is followed by coal, with an output valued at $11,650,180, and structural and miscellaneous totalling together $3,675,128.

By value, the various products of the mineral industry produced in 1926 are ranked in the following order: Lead, copper, coal, zinc, silver, gold, structural materials, miscellaneous minerals. The quantities of lead, copper, zinc, and silver produced in 1926 were the highest in the history of mining in the Province.

Due to the steady expansion of the *Sullivan* mine in recent years, lead has easily maintained first place in the value of mineral products produced in the Province for the last three years. The British Columbia output of lead is now nearly 10 per cent. of the total world output and the present rate of production should at least be maintained for many years.

In 1926 copper reached second place, having a value of nearly $700,000 greater than coal. During the war years, due to a very high price for copper, the production of this metal assumed first rank in mining in the Province. Commencing in 1919, a heavy slump took place in both the quantity and value of the copper-output, but a steady improvement has taken place in recent years, with the result that the output of 89,339,768 lb. of copper in 1926 was the highest that has ever been made in the industry. Continued expansion of our copper-mining industry may be confidently expected.

Coal-mining has not been in a particularly flourishing condition in recent years, but the outlook now is better than for some time past.

The *Sullivan* mine is also mainly responsible for the increase in zinc production in the last three years, but other mines are also contributing in part. A larger production of zinc is expected in 1927, as the zinc-refinery at Trail is being enlarged to a capacity of 280 tons a day.

The silver production of the Province is obtained from many mines, the two largest contributors being the *Sullivan* and the *Premier*.

The decline in the price of silver may have some effect in possibly retarding future production in the Slocan district, where in many of the mines silver is the most important value in the ore. Approximately 80 per cent. of the silver production of the Province comes from mines in which the silver value is of less importance than the other metals, such as gold, copper, lead, and zinc, contained therein. While the decreased revenue from a lowered silver price is to be regretted for these mines, no material lowering of production in the future may be anticipated as a consequence.

During the last three years the Provincial production of gold (including placer gold) has averaged about $5,000,000 annually. No great increase is expected, but as much gold is recovered as a by-product of copper-mining the outlook is favourable for an increase from this source. There is also increased development activity in certain gold-quartz camps.

The increase in the value of structural materials to a total value of $3,342,545 is indicative of the increased building and general business activity of the Province. This is a branch of the mineral industry that from the point of view of raw materials is capable of unlimited expansion. As the market for these products is practically a local one, the industry can only grow with increases in the population and expanding business activity.

Another infant part of the mineral industry is the mining of miscellaneous minerals. The records show the output in 1926 to be $332,583, or over twice that of the preceding year. Attention is now being directed to the possibility of utilizing certain non-metallic minerals in connection with various manufacturing industries.

DEVELOPMENT.

As has been briefly outlined, the production record of the mineral industry during 1926 was very satisfactory. The outlook for 1927 is also excellent and there is but little doubt that another high record will be made. During recent years increased production in British Columbia has been largely through greater outputs from existing mines, particularly the *Sullivan* mine at Kimberley. Some further increase in rate of output may be expected from some of the larger mines during 1927, but not to such an extent as during 1925 and 1926. The encouraging feature, however, is the amount of important development that has been carried on in many parts of the Province during the last three years. The results of this will become apparent by increasing the output of minerals during 1927 and ensuing years.

While production figures give a clear view of the growth or decline of an industry, in mining it is necessary to consider other factors to visualize the true condition of the industry. Mining is a business in which only one crop is supplied by nature to be harvested. Nor, as in the case of timber reserves, can the crop be seen, measured, and its value estimated. The mineral wealth of a country as a rule is only gradually unfolded for man's use. Much patient seeking and searching, together with the expenditure of time and money, are necessary to discover and prepare mineral resources for exploitation. This exploitation is recorded in the production figures, and it must always be remembered that the faster mineral is produced the greater the necessity for intensive search to replace the deposits mined out.

In other words, a very definite indication of a healthy mining industry is the carrying-on of both prospecting and development of mineral properties. In this respect the present year has been a satisfactory one. Development has been carried on intensively and much success has been attained. It may be conservatively stated that the total known ore reserves of the Province at the present time are greater than at any previous time, notwithstanding the fact that nearly one billion dollars' worth of mineral has been extracted since mining commenced. Development has been general in all the mineralized sections of the Province and much information regarding this work will be found in the reports of the Resident Engineers.

It is believed that an average number of prospectors was out in the hills during the season of 1926. The most important new discovery reported was one 8 miles from Topley, which is a station 59 miles east of Smithers, on the Canadian National Railway. The showing has only been slightly developed as yet, but reports indicate that it may prove to be a large body of ore

of milling grade, with values mainly in silver and gold. It has been acquired under option by the Standard Silver Lead Company and will be extensively developed. Another property in the North-eastern District, which is not quite a new discovery but which received attention in 1926, is the *Ferguson* group, situated about 36 miles north-west of Fort Grahame, on the Finlay river. It is reported that the property has an exceptionally large surface showing of silver-lead-zinc ore.

An important new silver-lead discovery was that of the *Prosperity* group, adjoining the *Porter-Idaho*, Marmot river. This property has been bonded by the Premier Gold Mining Company, a substantial cash payment having been made.

An interesting experiment in scientific large-scale prospecting has been commenced by the Consolidated Company in searching for phosphate-deposits in East Kootenay. The company has announced that some success was attained in 1926 and that the work will be actively carried on in 1927.

If suitable phosphate-deposits are found, the company will enter the fertilizer-manufacturing business, utilizing the unused sulphur content of the *Sullivan* ore to make sulphuric acid for treatment of the raw phosphate. The success of these plans would mean a new industry for the Province.

METALLURGICAL PLANTS.

The metallurgical treatment of ores in British Columbia during 1926 kept pace with the increased production and general activity that characterized the year. Existing plants were enlarged, improvements in efficient practice were made, and new plants were constructed.

Of the metallic mineral production of $51,863,534, approximately 72 per cent. was produced as refined metals within the Province, 12 per cent. was produced for export as lead bullion and blister-copper, and 16 per cent. was exported as crude ore or concentrate. A small production of refined metals is made at the Trail smelter from imported ores, principally from the State of Washington, U.S.A.

In the Southern Interior of the Province practically all ore produced is concentrated, smelted, and refined within the Province. In the Coast district two large mines—the *Britannia* and *Premier*—ship the bulk of their production as concentrates to American smelters, although a part of the *Premier* output goes to the Granby smelter at Anyox. The Granby Company now mills and smelts all its own ore at Anyox, together with any custom ore obtainable. The final product at Anyox is blister-copper, which is a product containing 98 per cent. copper, together with the gold and silver contained in the ores treated. This blister-copper is exported to the United States for refining.

The Ladysmith Tidewater Smelters, Limited, is to be incorporated to carry out the plans of Herbert Carmichael and H. B. Thompson in connection with the reopening of a plant on the site of the old Ladysmith smelter. The British Metals Corporation of London, England, will be connected with the new company.

It is planned to purchase sulphide ores and concentrates at the Ladysmith plant. The sampling plant at the smelter is available for sampling ores. Plans for a concentrator and other equipment to handle ore purchased are expected to be carried out when necessary ore supplies are made available.

A subsidiary company will be formed to acquire and develop promising mineral properties. Alfred J. Coulls will represent the British Metals Corporation and act as ore-buying representative of the new company. All products of the Ladysmith plant will be handled by the British Metals Corporation.

New mills under construction in 1926 on the *Dunwell*, *Toric*, Duthie Mines property, and the *Coronation* are expected to be completed and production commenced in 1927. A further increase in capacity of the Anyox concentrator of the Granby Company to 3,000 tons a day is expected.

New mills or reconditioning of old ones are planned for the *Ruth-Hope*, *Lucky Jim*, and other properties in the Slocan district.

The *Sullivan* mill of the Consolidated Company at Trail was brought up to a capacity of 4,000 tons a day in December of 1926. Further expansion by the same company is now being made at the Trail plant, to cope with the heavy tonnage from the *Sullivan* mill and also custom ore and concentrates. An 80-ton addition is being made to the zinc-refinery, which will bring the capacity up to 280 tons a day early in 1927. A cadmium by-product plant is to be erected and the customs concentrator is to have its capacity doubled, when it will be capable of treating 600 tons a day.

An interesting development is the recovery of pyrite as a by-product in the milling operations of the *Britannia*. It is expected that an output of about 3,500 tons a month will be made in 1927 by this company. The product is sold to sulphuric-acid plants in British Columbia and the States for its sulphur content.

METAL PRICES.

Metal prices generally in the world's markets in 1926 were somewhat lower than during 1924. The following table shows comparative average yearly prices for the years 1924, 1925, and 1926:—

AVERAGE METAL-MARKET PRICES FOR 1924, 1925, AND 1926.

Year.	Silver (New York).	Copper (New York).	Lead.		Zinc.	
			London.	New York.	London.	St. Louis.
	Cents per Oz.	Cents per Lb.	Cents per Lb.	Cents per Lb.	Cents per Lb.	Cents per Lb.
1924	*66.78	*13.02	6.844	*8.09	6.706	*6.34
1925	*69.065	*14.042	*7.848	9.020	*7.892	7.622
1926	*62.107	*13.795	*6.7513	8.417	*7.4096	7.337

* Prices used in compiling total metal valuations in 1924, 1925, and 1926 Annual Reports.

About the end of September a serious decline commenced in the market price of silver and in a short time the price had declined to about 51½ cents an ounce. This shows a big drop from the average price in January of 67.79 cents an ounce. A recovery to 54 cents an ounce took place by the end of the year. The future of silver seems uncertain, with the possibility of the present low price-level being maintained for some time.

The prices of copper, lead, and zinc, while slightly below last year's averages, are high enough to yield satisfactory profits to the miners, and the market outlook for these metals is excellent. The present prices or higher are likely to be maintained indefinitely.

PROFITS OF MINING COMPANIES.

The following table shows the dividends declared by companies engaged in the mineral industry in the Province during 1925 and 1926:—

Company.	1925.	1926.
The Consolidated Mining and Smelting Co. of Canada, Ltd.	$3,238,054	$5,234,700
Premier Gold Mining Co.	1,600,375	1,600,437
Howe Sound Copper Co.*	467,189	1,736,133
Silversmith Mines, Ltd.	125,000	200,000
Wallace Mountain Mines, Ltd. (*Sally*)	59,400	.....
I.X.L.	21,600	.....
Bell	88,000	48,510
Belmont-Surf Inlet	312,500	437,500
Crow's Nest Pass Coal Co.	372,690	372,690
Clayburn Co.	20,000	44,000
Whitewater Mines, Ltd.	.....	25,000
Rosebery-Surprise Mining Co.	.....	25,000
Others	15,800	23,300
Totals	$6,320,608	$9,747,270

The amount of $9,747,270 shown above as distributed in 1926 by no means represents the total net profits earned during that year. In nearly all cases substantial sums are set aside from profits to the credit of surplus and reserve accounts. Profits accruing to private companies and individual mining enterprises as a rule are not given publicity as dividends, as is the case

* The Howe Sound Copper Company is the holding company for the *Britannia* mine in British Columbia and the *El Potosi* mine in Mexico. Dividends paid by this company are therefore derived from the profits on operation of both mines, so that only part of the dividends paid, as shown, can be credited to the *Britannia* mine.

with the large companies, so that no record of these profits, which in the aggregate are considerable, is available. Several companies made substantial profits in 1926, but did not declare any dividends.

The mineral industry of British Columbia is at the present time in a prosperous and healthy condition. The best evidence of this is to be seen in the keen interest in it now being shown and the ease with which capital is obtained for legitimate mining propositions.

The greatest needs of the industry at the present time are: (1) Widespread prospecting of the known mineralized areas by semi-trained men, with more careful and exact methods than have been employed in the past; (2) the testing of many dormant undeveloped mineral properties by companies strong enough financially to try out several in the hope of obtaining one profitable mine.

MINERAL PRODUCTION OF BRITISH COLUMBIA.

METHOD OF COMPUTING PRODUCTION.

The total mineral production of the Province consists of the outputs of metals, coal, structural materials, and miscellaneous minerals, valued at standard recognized prices.

In the Annual Report for 1925 some changes were made in the methods used in previous years in computing and valuing the products of the industry; but in order to facilitate comparisons with former years the same general style of tables was adhered to. The methods used in 1925 are again used in this Report.

The following notes explain the methods used:—

(1.) From the certified returns of lode mines of ore and concentrate shipments made during the full calendar year by the producers the net recovered metal contents have been determined by deducting from the "assay value content" necessary corrections for smelting and refining losses.

In making comparisons of production figures with previous years, it should be remembered that prior to 1925 in the Annual Reports the total metal production, with the exception of copper, was determined by taking the assay value content of all ores shipped; deductions for slag losses were made by taking varying percentages off the metal prices. Apparent small decreases of production in some Divisions in 1925 as compared with 1924 have therefore been caused by the different methods of computation.

(2.) Gold-placer returns are received from the operators in dollars and the dollar value converted to ounces of placer gold at $17 an ounce, which is believed to represent the average value of placer gold throughout the Province.

(3.) The prices used in valuing the different metals are: For gold, the world standard price of $20.6718 an ounce; for silver, the average New York metal-market price for the year; for lead, the average London metal-market price for the year; for zinc, the average London metal-market price for the year; and for copper, the average New York metal-market price for the year. The silver and copper outputs of the Province are bought and sold on the basis of the New York metal-market prices of these metals and for this reason they are used. The bulk of the lead and zinc production of the Province is sold on the basis of the London prices of these metals and they are therefore used. The New York and Montreal lead- and zinc-market prices differ materially from the London prices of these metals and are not properly applicable to valuing the British Columbia production.

(4.) This year a change has been made in computing coal and coke statistics. The practice in former years has been to list coal and coke production (in part) as primary mineral production. Only the coke made in bee-hive ovens was so credited; that made in by-product ovens was not listed as coke, but the coal used making this coke was credited as coal production. The result was that the coke-production figures were incomplete.

This year the standard practice of the Bureau of Statistics, Ottawa, has been adopted. This consists of crediting all coal produced, including that used in making coke, as primary mineral production. Coke-making is considered a manufacturing industry. As it is, however, of interest to the mineral industry, a table included in the Report shows the total coke produced in the Province, together with by-products, and the values given by the producers. This valuation of coke is not, of course, included in the total gross value of mineral production of the Province.

(5.) Structural materials are valued at the prices given by the producers.

(6.) Miscellaneous minerals are valued at the prices given by the producers.

STATISTICAL TABLES.

TABLE I.—TOTAL PRODUCTION FOR ALL YEARS UP TO AND INCLUDING 1926.

Gold, placer	$ 78,018,548
Gold, lode	126,972,318
Silver	80,787,003
Copper	209,967,068
Lead	106,976,442
Zinc	50,512,557
Coal and coke	284,699,133
Structural materials	48,248,431
Miscellaneous minerals, etc.	1,926,970
Total	$988,108,470

TABLE II.—PRODUCTION FOR EACH YEAR FROM 1852 TO 1926 (INCLUSIVE).

1852 to 1895 (inclusive)	$ 94,547,241	1912	$ 32,440,800
1896	7,507,956	1913	30,296,398
1897	10,455,268	1914	26,388,825
1898	10,906,861	1915	29,447,508
1899	12,393,131	1916	42,290,462
1900	16,344,751	1917	37,010,392
1901	20,086,780	1918	41,782,474
1902	17,486,550	1919	33,296,313
1903	17,495,954	1920	35,543,084
1904	18,977,359	1921	28,066,641
1905	22,461,325	1922	35,158,843
1906	24,980,546	1923	41,304,320
1907	25,882,560	1924	48,704,604
1908	23,851,277	1925	61,492,242
1909	24,443,025	1926	67,188,842
1910	26,377,066		
1911	23,499,072	Total	$988,108,470

Table III. gives a statement in detail of the quantities and value of the different mineral products for the years 1924, 1925, and 1926.

TABLE III.—QUANTITIES AND VALUE OF MINERAL PRODUCTS FOR 1924, 1925, AND 1926.

Description.	1924.		1925.		1926.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Gold, placer*.....oz.	21,037	$ 420,750	* 16,476	$ 280,092	* 20,912	$ 355,503
Gold, lode.....oz.	247,716	5,120,535	209,719	4,335,269	201,427	4,163,859
Silver.....oz.	8,341,768	5,292,184	7,654,844	5,286,818	10,748,536	6,675,606
Copper.....lb.	64,845,393	8,442,870	72,306,432	10,153,269	89,339,768	12,324,421
Lead.....lb.	170,384,481	12,415,917	237,899,199	18,670,329	263,023,937	17,757,535
Zinc.....lb.	79,130,970	4,266,741	98,257,099	7,754,450	142,876,947	10,586,610
Coal.....tons, 2,240 lb.	1,939,526	9,697,630	2,328,522	11,642,610	2,330,036	11,650,180
Coke.....tons, 2,240 lb.	30,615	214,305	75,185	526,295	†	†
Structural materials and miscellaneous minerals		2,833,672		2,843,110		3,675,128
Totals		$48,704,604		$61,492,242		$67,188,842

* Placer gold in 1925 and 1926 valued at $17 an ounce; in former years at $20.
† Coke not included in primary mineral production; coal used in making coke included in coal figures.

TABLE IV.—Output of Mineral Products by Districts and Divisions.

Names.	Divisions.			Districts.		
	1924.	1925.	1926.	1924.	1925.	1926.
North-western District (No. 1)				$11,012,170	$11,116,434	$11,069,032
Atlin, Stikine, and Liard	$ 153,122	$ 98,365	$ 234,936			
Nass River	5,024,242	5,977,875	5,853,804			
Portland Canal	4,952,955	4,170,310	4,678,739			
Skeena, Queen Charlotte, and Bella Coola	881,851	869,984	301,553			
North-eastern District (No. 2)				486,078	321,876	552,203
Cariboo and Quesnel	240,000	207,538	299,428			
Omineca and Peace River	246,078	114,338	252,775			
Central District (No. 3)				355,664	333,063	831,975
Nicola and Vernon	332,693	230,281	273,979			
Yale, Ashcroft, and Kamloops	9,386	17,235	453,465			
Lillooet and Clinton	13,585	85,547	104,531			
Southern District (No. 4)				1,554,671	2,062,183	3,972,608
Grand Forks, Greenwood, and Osoyoos	748,486	893,985	668,165			
Similkameen	806,185	1,168,198	3,304,443			
Eastern District (No. 5)				21,952,774	33,982,941	36,704,484
Fort Steele	18,757,222	31,510,755	33,825,684			
Windermere and Golden	127,538	86,369	59,871			
Ainsworth	211,566	392,968	749,120			
Slocan and Slocan City	1,270,153	1,345,269	1,452,971			
Nelson and Arrow Lake	47,567	118,992	321,537			
Trail Creek	1,510,122	524,215	278,117			
Revelstoke, Trout Lake, and Lardeau	28,606	4,373	17,184			
Western District (No. 6)				13,343,247	13,675,745	14,058,540
Nanaimo, Alberni, Clayoquot, Quatsino, and Victoria (Vancouver Island)	9,428,015	8,832,823	8,613,205			
Vancouver and New Westminster (Mainland)	3,915,232	4,842,922	5,445,335			
Totals			$67,188,842	$48,704,604	$61,492,242	$67,188,842

TABLE V.—Yield of Placer Gold to Date.

1858	$ 705,000	1876	$1,786,648	1893	$ 356,131	1910	$ 540,000
1859	1,615,070	1877	1,608,182	1894	405,516	1911	426,000
1860	2,228,543	1878	1,275,204	1895	481,683	1912	555,500
1861	2,666,118	1879	1,290,058	1896	544,026	1913	510,000
1862	2,656,903	1880	1,013,827	1897	513,520	1914	565,000
1863	3,913,563	1881	1,046,737	1898	643,346	1915	770,000
1864	3,735,850	1882	954,085	1899	1,344,900	1916	580,500
1865	3,491,205	1883	794,252	1900	1,278,724	1917	496,000
1866	2,662,106	1884	736,165	1901	970,100	1918	320,000
1867	2,480,868	1885	713,738	1902	1,073,140	1919	286,500
1868	3,372,972	1886	903,651	1903	1,060,420	1920	221,600
1869	1,774,978	1887	693,709	1904	1,115,300	1921	233,200
1870	1,336,956	1888	616,731	1905	969,300	1922	364,800
1871	1,799,440	1889	588,923	1906	948,400	1923	420,000
1872	1,610,972	1890	490,435	1907	828,000	1924	420,750
1873	1,305,749	1891	429,811	1908	647,000	1925	280,092
1874	1,844,618	1892	399,526	1909	477,000	1926	355,503
1875	2,474,004						
						Total	$78,018,548

TABLE VI.—Production of Lode Mines.

Year.	Gold.		Silver.		Copper.		Lead.		Zinc.		Total Value.
	Oz.	Value.	Oz.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	
		$		$		$		$		$	$
1887	.....	.....	17,690	17,331	.....	.....	204,800	9,216	.....	.....	26,547
1888	.....	.....	79,780	75,000	.....	.....	674,500	29,813	.....	.....	104,813
1889	.....	.....	53,192	47,873	.....	.....	165,100	6,498	.....	.....	54,371
1890	.....	.....	70,427	73,948	.....	.....	.....	.....	.....	.....	73,948
1891	.....	.....	4,500	4,000	.....	.....	.....	.....	.....	.....	4,000
1892	.....	.....	77,160	66,935	.....	.....	808,420	33,064	.....	.....	99,999
1893	1,170	23,404	227,000	195,000	.....	.....	2,135,023	78,996	.....	.....	297,400
1894	6,252	125,014	746,379	470,219	324,680	16,234	5,662,523	169,875	.....	.....	781,342
1895	39,264	785,271	1,496,522	977,229	952,840	47,642	16,475,464	532,255	.....	.....	2,342,397
1896	62,259	1,244,180	3,135,343	2,100,689	3,818,556	190,926	24,199,977	721,384	.....	.....	4,257,179
1897	106,141	2,122,820	5,472,971	3,272,836	5,325,180	266,258	38,841,135	1,390,517	.....	.....	7,052,431
1898	110,061	2,201,217	4,292,401	2,375,841	7,271,678	874,781	31,693,559	1,077,581	.....	.....	6,529,420
1899	138,315	2,857,573	2,939,413	1,663,708	7,722,591	1,351,453	21,862,436	878,870	.....	.....	6,751,604
1900	167,153	3,453,381	3,958,175	2,309,200	9,997,080	1,615,289	63,358,621	2,691,887	.....	.....	10,069,757
1901	210,384	4,348,603	5,151,333	2,884,745	27,603,746	4,446,963	51,582,906	2,002,733	.....	.....	13,683,044
1902	236,491	4,888,269	3,917,917	1,941,328	29,636,057	3,446,673	22,536,381	824,832	.....	.....	11,101,102
1903	232,831	4,812,616	2,996,204	1,521,472	34,359,921	4,547,535	18,089,283	689,744	.....	.....	11,571,367
1904	222,042	4,589,608	3,222,481	1,719,516	35,710,128	4,578,037	36,646,244	1,421,874	.....	.....	12,309,035
1905	238,660	4,933,102	3,439,417	1,971,818	37,692,251	5,876,222	56,580,703	2,399,022	.....	.....	15,180,164
1906	224,027	4,630,639	2,990,262	1,897,320	42,990,488	8,288,565	52,408,217	2,667,578	.....	.....	17,484,102
1907	196,179	4,055,020	2,745,448	1,703,825	40,832,720	8,166,544	47,738,703	2,291,458	.....	.....	16,216,847
1908	255,582	5,282,880	2,631,389	1,321,483	47,274,614	6,240,249	43,195,733	1,632,799	.....	.....	14,477,411
1909	238,224	4,924,090	2,532,742	1,239,270	45,597,245	5,918,522	44,396,346	1,709,259	8,500,000	400,000	14,191,141
1910	267,701	5,533,380	2,450,241	1,245,016	38,243,934	4,871,512	34,658,746	1,386,350	4,184,192	192,473	13,228,731
1911	228,617	4,725,513	1,892,364	958,293	36,927,656	4,571,644	26,872,397	1,069,521	2,634,544	129,092	11,454,063
1912	257,496	5,322,442	3,132,108	1,810,045	51,456,537	8,408,513	44,871,454	1,805,627	5,358,280	316,139	17,662,766
1913	272,254	5,627,490	3,465,856	1,968,606	46,460,305	7,094,489	55,364,677	2,175,832	6,758,768	324,421	17,190,838
1914	247,170	5,109,004	3,602,180	1,876,736	45,009,699	6,121,319	50,625,048	1,771,877	7,866,467	346,125	15,225,061
1915	250,021	5,167,934	3,366,506	1,588,991	56,918,405	9,835,500	46,503,590	1,939,200	12,982,440	1,460,524	19,992,149
1916	221,932	4,587,334	3,301,923	2,059,739	65,379,364	17,784,494	48,727,516	3,007,462	37,168,980	4,043,985	31,483,014
1917	114,523	2,367,190	2,929,216	2,265,749	59,007,565	16,038,256	37,307,465	2,951,020	41,848,513	3,166,259	26,788,474
1918	164,674	3,403,812	3,498,172	3,215,870	61,483,754	15,143,449	43,899,661	2,928,107	41,772,916	2,899,040	27,590,278
1919	152,426	3,150,645	3,403,119	3,592,673	42,459,339	7,939,896	29,475,968	1,526,855	56,737,651	3,540,429	19,750,498
1920	120,048	2,481,392	3,377,849	3,235,980	44,887,676	7,832,899	39,331,218	2,816,115	47,208,268	3,077,979	19,444,365
1921	135,663	2,804,154	2,673,389	1,591,201	39,036,993	4,879,624	41,402,288	1,693,354	49,419,372	1,952,065	12,920,398
1922	197,856	4,089,684	7,101,311	4,554,781	32,359,896	4,329,754	67,447,985	3,480,316	57,146,548	2,777,322	19,231,857
1923	179,245	3,704,994	6,032,986	3,718,129	57,720,290	8,323,266	96,663,152	6,321,770	58,343,462	3,278,903	25,347,062
1924	247,716	5,120,535	8,341,768	5,292,184	64,845,393	8,442,870	170,384,481	12,415,917	79,130,970	4,266,741	35,538,247
1925	209,719	4,335,269	7,654,844	5,286,818	72,806,432	10,153,269	237,899,199	18,670,329	98,257,099	7,754,450	46,200,135
1926	201,427	4,163,859	10,748,556	6,675,606	89,339,768	12,324,421	263,023,937	17,757,535	142,876,947	10,586,610	51,508,031
Totals	6,153,515	126,972,318	129,170,534	80,787,003	1,280,951,781	209,967,068	1,913,714,856	106,976,442	758,195,417	50,512,557	575,215,388

TABLE VII.—PRODUCTION IN DETAIL OF THE

Districts and Divisions.	Year	Tons.	Gold—Placer. ★		Gold—Lode.		Silver.	
			Ounces	Value.	Ounces.	Value.	Ounces.	Value.
				$		$		$
North-western District (No. 1)								
Atlin	1925	1,710	2,896	49,229	1,878	38,822	2,786	1,924
	1926	9,366	2,607	44,318	7,757	160,351	25,583	16,510
Stikine	1925	.....	41	700	.....	.....	.....	.....
	1926	.....	.....	.....	.....	.....	.....	.....
Liard	1925	.....	441	7,500	.....	.....	.....	.....
	1926	.....	624	10,608	.....	.....	.....	.....
Nass River	1925	1,168,695	.....	.....	7,484	154,708	390,954	270,012
	1926	1,217,927	.....	.....	7,906	163,431	409,470	254,310
Portland Canal	1925	168,798	.....	.....	118,469	2,448,967	2,392,046	1,652,066
	1926	257,140	.....	.....	124,207	2,567,582	3,092,503	1,920,661
Skeena	1925	78,640	.....	.....	35,086	725,291	21,273	14,692
	1926	25,769	.....	.....	11,128	230,036	6,927	4,302
Queen Charlotte	1925	.....	4	70	.....	.....	.....	.....
	1926	.....	.....	.....	.....	.....	.....	.....
Bella Coola	1925	.....	.....	.....	.....	.....	.....	.....
	1926	.....	.....	.....	.....	.....	.....	.....
North-eastern District (No. 2)								
Cariboo	1925	.....	8,919	151,627	.....	.....	.....	.....
	1926	.....	10,059	170,993	.....	.....	.....	.....
Quesnel	1925	.....	2,995	50,911	.....	.....	.....	.....
	1926	.....	7,149	121,535	.....	.....	.....	.....
Omineca	1925	842	269	4,560	121	2,501	85,888	59,319
	1926	1,861	59	1,000	439	9,075	239,053	148,469
Peace River	1925	.....	177	3,000	.....	.....	.....	.....
	1926	.....	88	1,500	.....	.....	.....	.....
Central District (No. 3)								
Nicola	1925	83	.....	.....	.....	.....	59	41
	1926	63	.....	.....	12	248	1,060	658
Vernon	1925	.....	4	60	.....	.....	.....	.....
	1926	1	.....	.....	.....	.....	51	32
Yale	1925	1	29	500	37	765	.....	.....
	1926	320	29	500	59	1,220	16	10
Ashcroft	1925	.....	.....	.....	.....	.....	.....	.....
	1926	.....	15	250	.....	.....	.....	.....
Kamloops	1925	.....	78	1,320	.....	.....	.....	.....
	1926	1,795	18	302	125	2,584	133,815	83,108
Lillooet	1925	7,098	83	1,415	3,531	72,992	.....	.....
	1926	10,500	29	500	4,580	94,677	807	501
Clinton	1925	.....	95	1,620	.....	.....	.....	.....
	1926	.....	68	1,155	.....	.....	.....	.....
Southern District (No. 4.)								
Grand Forks	1925	36	.....	.....	.....	.....	709	490
	1926	11	.....	.....	20	413	16	10
Greenwood	1925	1,773	.....	.....	53	1,096	480,822	332,080
	1926	3,016	.....	.....	166	3,432	408,562	253,745
Osoyoos	1925	50,914	.....	.....	19,426	401,570	2,710	1,872
	1926	50,358	.....	.....	16,280	336,537	11,353	7,051
Similkameen	1925	122,996	146	2,482	242	5,002	20,472	14,139
	1926	669,356	96	1,621	3,988	82,439	141,236	87,717
Eastern District (No. 5)								
Fort Steele	1925	1,117,615	262	4,449	.....	.....	3,106,682	2,145,630
	1926	1,198,931	29	500	321	6,636	4,942,364	3,069,554
Windermere	1925	1,276	.....	.....	.....	.....	39,262	27,116
	1926	806	.....	.....	.....	.....	20,356	12,643
Golden	1925	.....	2	40	.....	.....	.....	.....
	1926	.....	13	221	.....	.....	.....	.....
Ainsworth	1925	25,447	.....	.....	16	331	79,057	54,601
	1926	59,559	.....	.....	26	537	139,832	86,845
Slocan	1925	64,486	.....	.....	310	6,408	856,375	591,455
	1926	56,387	.....	.....	139	2,873	938,880	583,110
Slocan City	1925	352	.....	.....	.....	.....	9,458	6,532
	1926	26	.....	.....	.....	.....	1,136	705
Nelson	1925	6,723	.....	.....	723	14,946	1,652	1,141
	1926	18,780	.....	.....	6,671	137,802	52,152	32,390
Arrow Lake	1925	.....	.....	.....	.....	.....	.....	.....
	1926	.....	.....	.....	.....	.....	.....	.....
Trail Creek	1925	37,596	.....	.....	14,112	291,720	32,353	22,345
	1926	25,484	.....	.....	7,600	157,106	24,705	15,344
Revelstoke	1925	.....	29	500	.....	.....	.....	.....
	1926	9	29	500	.....	.....	143	89
Trout Lake	1925	.....	.....	.....	.....	.....	.....	.....
	1926	.....	.....	.....	.....	.....	.....	.....
Lardeau	1925	7	.....	.....	.....	.....	471	325
	1926	137	.....	.....	8	165	9,314	5,785
Western District (No. 6)								
Nanaimo	1925	63	.....	.....	.....	.....	71	49
	1926	.....	.....	.....	.....	.....	.....	.....
Alberni	1925	.....	.....	.....	.....	.....	.....	.....
	1926	.....	.....	.....	.....	.....	.....	.....
Clayoquot	1925	.....	.....	.....	.....	.....	.....	.....
	1926	.....	.....	.....	.....	.....	.....	.....
Quatsino	1925	.....	.....	.....	.....	.....	.....	.....
	1926	.....	.....	.....	.....	.....	.....	.....
Victoria	1925	.....	6	109	.....	.....	.....	.....
	1926	.....	.....	.....	.....	.....	.....	.....
New Westminster	1925	.....	.....	.....	.....	.....	.....	.....
	1926	1	.....	.....	.....	.....	109	68
Vancouver	1925	994,113	.....	.....	8,231	170,150	131,744	90,989
	1926	1,156,470	.....	.....	9,995	206,615	148,113	91,989
Totals	1925	3,849,269	16,479	280,092	209,719	4,335,269	7,654,844	5,286,818
	1926	4,775,073	20,912	355,503	201,427	4,163,859	10,748,556	6,675,606

★ Placer Gold is valued at $17 an ounce, which is believed to be a fair average for the whole Province.

METALLIFEROUS MINES FOR 1925 AND 1926.

COPPER.		LEAD.		ZINC.		TOTALS FOR DIVISIONS.		TOTALS FOR DISTRICTS.
Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	1925.	1926.	1926.
	$		$		$	$	$	$
								10,916,169
		1,149	90			90,065		
		46,648	3,149				224,328	
						700		
						7,500		
							10,608	
39,510,163	5,548,017	1,753	138			5,972,875		
38,686,513	5,336,804	2,876	194				5,754,739	
40	6	839,837	65,910	17,247	1,361	4,168,310		
1,036,113	142,932	643,061	43,415	42,503	3,149		4,677,739	
677,422	95,124					835,107		
104,512	14,417						248,755	
						70		
								533,452
						151,627		
							170,993	
						50,911		
							121,535	
		227,610	17,863			84,243		
		645,631	43,588	503,295	37,292		233,424	
						3,000		
							1,500	
								208,834
18,113	2,543					2,584		
8,170	1,127	2,995	202				2,235	
						60		
		91	6				38	
						1,265		
							1,730	
							250	
						1,320		
		130,667	8,822	174,530	12,932		107,748	
						74,407		
							95,678	
						1,620		
							1,155	
								3,239,904
		19,224	1,509			1,999		
							423	
		258,883	20,317			353,493		
35,342	4,876	180,495	12,186	1,339	99		274,338	
						403,442		
							343,588	
3,464,891	486,540					508,163		
17,752,253	2,448,924	6,598	445	5,525	409		2,621,555	
								32,396,327
1,696	238	227,306,993	17,839,053	92,164,850	7,273,650	27,263,020		
9,516	1,313	252,050,057	17,016,655	127,750,444	9,465,796		29,560,454	
		754,494	59,213			86,329		
		330,680	26,376	16,652	1,234		40,253	
						40		
							221	
		2,760,909	216,676	1,537,774	121,360	392,968		
		3,442,653	232,425	5,793,999	429,313		749,120	
		4,860,183	381,427	4,413,290	348,297	1,327,587		
		4,584,822	309,535	7,500,374	555,748		1,451,266	
		50,302	3,948	91,248	7,202	17,682		
							705	
		810,877	63,637	32,690	2,580	82,304		
1,341	185	856,303	57,812	1,056,026	78,248		303,537	
1,140,506	160,150					474,215		
751,485	103,667						276,117	
						500		
		4,573	393				898	
		6,985	548			873		
		35,786	2,416	32,260	2,390		10,756	
								4,568,848
2,747	385					434		
						109		
43	6						74	
27,490,854	3,860,266					4,121,405		
30,954,479	4,270,170						4,568,774	
72,306,432	10,153,269	237,899,199	18,670,329	98,257,099	7,754,450	46,480,227		
89,339,768	12,324,421	263,023,937	17,757,535	142,876,947	10,586,610		51,863,534	51,863,534

TABLE VIII.—Coal Production per Year to Date.*

Year.	Tons (2,240 lb.)	Value.	Year.	Tons (2,240 lb.)	Value.
1836–1885	3,029,011	$ 9,468,557	1907	1,800,067	$ 6,300,235
1886	326,636	979,908	1908	1,677,849	5,872,472
1887	413,360	1,240,080	1909	2,006,476	7,022,666
1888	489,301	1,467,903	1910	2,800,046	9,800,161
1889	579,830	1,739,490	1911	2,193,062	7,675,717
1890	678,140	2,034,420	1912	2,628,804	9,200,814
1891	1,029,097	3,087,291	1913	2,137,483	7,481,190
1892	826,335	2,479,005	1914	1,810,967	6,338,385
1893	978,294	2,934,882	1915	1,611,129	5,638,952
1894	1,012,953	3,038,859	1916	2,084,093	7,294,325
1895	939,654	2,818,962	1917	2,149,975	7,524,913
1896	896,222	2,688,666	1918	2,302,245	11,511,225
1897	882,854	2,648,562	1919	2,267,541	11,337,705
1898	1,135,865	3,407,595	1920	2,595,125	12,975,625
1899	1,306,324	3,918,972	1921	2,483,995	12,419,975
1900	1,439,595	4,318,785	1922	2,511,843	12,559,215
1901	1,460,331	4,380,993	1923	2,453,223	12,266,115
1902	1,397,394	4,192,182	1924	1,939,526	9,697,630
1903	1,168,194	3,504,582	1925	2,328,522	11,642,610
1904	1,253,628	3,760,884	1926	2,330,036	11,650,180
1905	1,384,312	4,152,936			
1906	1,517,303	4,551,909	Totals	68,256,640	$259,025,533

* For all years to 1925 (inclusive) figures are net coal production and do not include coal made into coke. The 1926 figures are entire coal production, including coal made into coke.

TABLE IX.—Coke Production from Bee-hive Ovens in British Columbia from 1895 to 1925.

Year.	Tons (2,240 lb.)	Value.	Year.	Tons (2,240 lb.)	Value.
1895–97	19,396	$ 96,980	1913	286,045	$ 1,716,270
1898 (estimated)	35,000	175,000	1914	234,577	1,407,462
1899	34,251	171,255	1915	245,871	1,475,226
1900	85,149	425,745	1916	267,725	1,606,350
1901	127,081	635,405	1917	159,905	959,430
1902	128,015	640,075	1918	188,967	1,322,769
1903	165,543	827,715	1919	91,138	637,966
1904	238,428	1,192,140	1920	67,792	474,544
1905	271,785	1,358,925	1921	59,434	416,038
1906	199,227	996,135	1922	45,835	320,845
1907	222,913	1,337,478	1923	58,919	412,433
1908	247,399	1,484,394	1924	30,615	214,305
1909	258,703	1,552,218	1925	75,185	526,295
1910	218,029	1,308,174			
1911	66,005	396,030			
1912	264,333	1,585,998	Totals	4,393,255	$25,673,600

TABLE X.—Coke and By-products Production of British Columbia, 1926.*

	Quantity.	Value.
Coal used in making coke, long tons	267,713	$1,338,565
Coke made in bee-hive ovens, long tons	93,953	
Coke made in by-product ovens, long tons	40,848	
Coke made in gas plants, long tons	42,468	
Total coke made, long tons	177,269	$1,437,666
Gas produced		1,009,613
Tar		50,035
Other by-products		45,772
Total production value of coke industry		$2,543,086

* Not primary mineral production.

TABLE XI.—Production in Detail of Structural Materials, 1926.

District and Division.	Cement.	Lime and Limestone.	Building-stone.	Riprap and Crushed Rock.	Sand and Gravel.	Pottery and Tile.	Clay.	Firebrick.	Face and Front Brick.	Red Brick.	Totals for Divisions.	Totals for Districts.
	$	$	$	$	$	$	$	$	$	$	$	$
North-western District (No. 1)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	55,798
Atlin, Stikine, and Liard	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nass River	.....	.....	.....	1,000	1,000	.....	.....	.....	.....	.....	2,000	.....
Portland Canal	.....	.....	.....	1,000	.....	.....	.....	.....	.....	.....	1,000	.....
Skeena, Queen Charlotte, and Bella Coola	.....	52,798	.....	.....	.....	.....	.....	.....	.....	.....	52,798	.....
North-eastern District (No. 2)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,551
Cariboo and Quesnel	.....	1,000	.....	1,000	3,000	.....	.....	.....	.....	.....	5,000	.....
Omineca and Peace River	.....	.....	.....	1,000	4,551	.....	.....	.....	.....	.....	5,551	.....
Central District (No. 3)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	204,987
Nicola and Vernon	.....	1,000	4,500	1,000	1,000	.....	.....	.....	.....	3,016	10,516	.....
Yale, Ashcroft, and Kamloops	.....	1,000	.....	121,000	69,271	.....	.....	.....	.....	3,200	194,471	.....
Lillooet and Clinton	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southern District (No. 4)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,666
Grand Forks, Greenwood, and Osoyoos	.....	.....	.....	.....	2,879	.....	.....	.....	.....	6,787	9,666	.....
Similkameen	.....	1,000	.....	.....	.....	.....	.....	.....	.....	.....	1,000	.....
Eastern District (No. 5)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50,927
Fort Steele	.....	1,000	.....	6,000	1,000	.....	.....	.....	.....	.....	8,000	.....
Windermere and Golden	.....	.....	.....	.....	19,397	.....	.....	.....	.....	.....	19,397	.....
Ainsworth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Slocan and Slocan City	.....	.....	.....	1,000	.....	.....	.....	.....	.....	.....	1,000	.....
Nelson and Arrow Lake	.....	1,000	4,000	5,000	5,000	.....	.....	.....	.....	.....	15,000	.....
Trail Creek	.....	1,000	.....	1,000	.....	.....	.....	.....	.....	.....	2,000	.....
Revelstoke, Trout Lake, and Lardeau	.....	.....	.....	4,530	1,000	.....	.....	.....	.....	.....	5,530	.....
Western District (No. 6)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,009,616
Nanaimo, Alberni, Clayoquot, Quatsino, and Victoria (Vancouver Island)	1,225,884	492,351	165,317	1,970	61,101	6,685	.....	.....	.....	180,421	2,133,729	.....
Vancouver and New Westminster (Mainland)	.....	4,900	900	151,097	162,103	259,444	13,239	178,975	102,823	2,406	875,887	.....
Totals	1,225,884	557,049	174,717	296,597	331,302	266,129	13,239	178,975	102,823	195,830	3,342,545	3,342,545

TABLE XII.—Miscellaneous Minerals: Production by Mineral Survey Districts, 1926.

District.	Flux: Limestone and Silica.	Gypsum.	Arsenic.	Pyrite.	Sodium Carbonate.	Platinum.	Bentonite.	Iron, Bog.	Silicate of Alumina.	District Totals.
	$	$	$	$	$	$	$	$	$	$
No. 1	89,825	.....	.....	7,240	.....	.....	.....	.....	.....	97,065
No. 2	.....	.....	.....	.....	.....	.....	.....	.....	1,900	1,900
No. 3	.....	154,462	.....	.....	7,537	.....	.....	.....	.....	161,999
No. 4	26,758	.....	11,262	.....	.....	4,258	150	.....	.....	42,428
No. 5	.....	5,360	.....	9,630	.....	.....	.....	.....	.....	14,990
No. 6	13,601	.....	.....	.....	.....	.....	.....	600	.....	14,201
Totals	130,184	159,822	11,262	16,870	7,537	4,258	150	600	1,900	332,583

TABLE XIII.

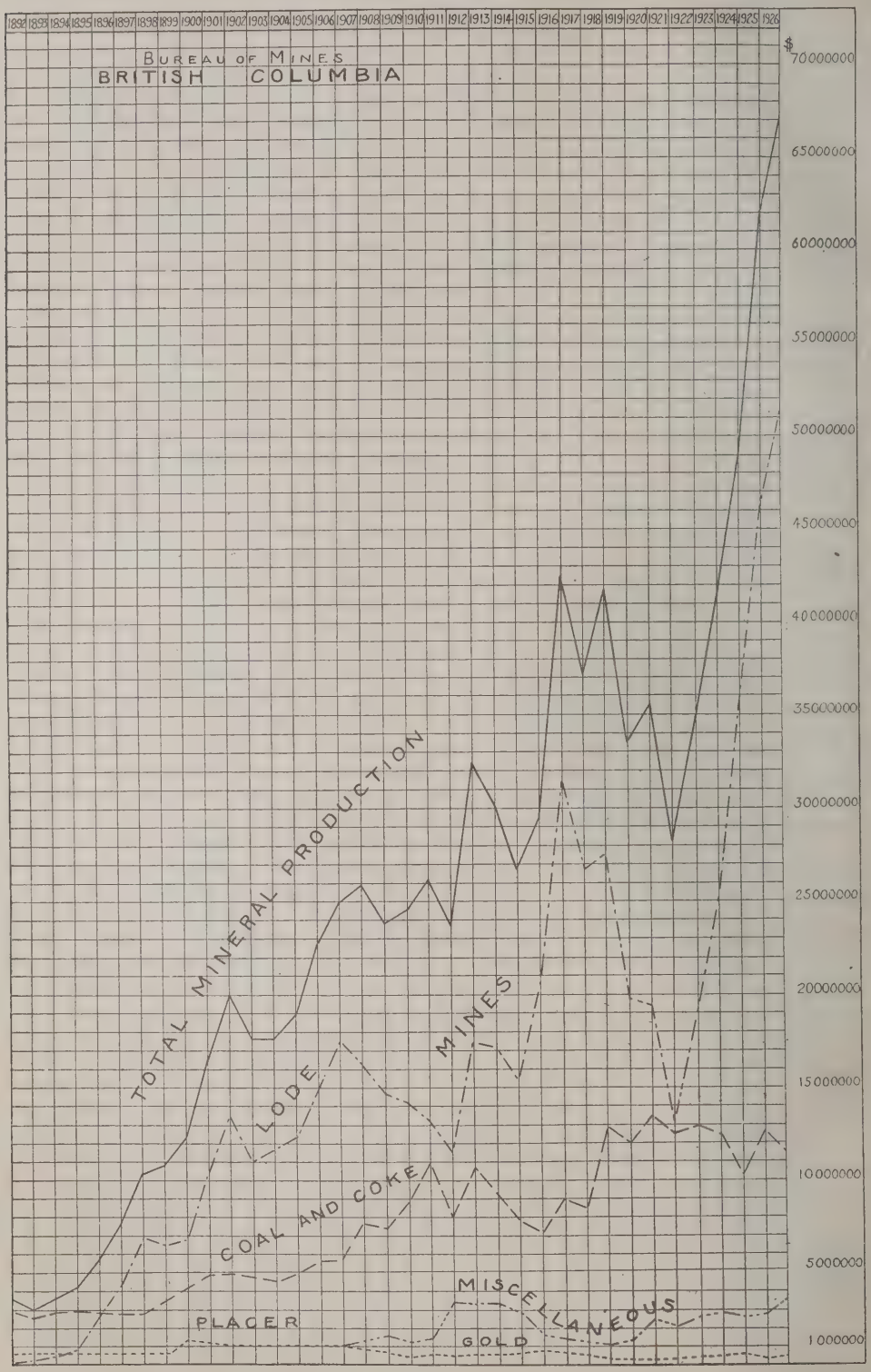
BUREAU OF MINES
BRITISH COLUMBIA
1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926
$ 70000000
65000000
60000000
55000000
50000000
45000000
40000000
35000000
30000000
25000000
20000000
15000000
10000000
5000000
1000000
TOTAL MINERAL PRODUCTION
LODE MINES
COAL AND COKE
MISCELLANEOUS
PLACER GOLD

TABLE XIV.

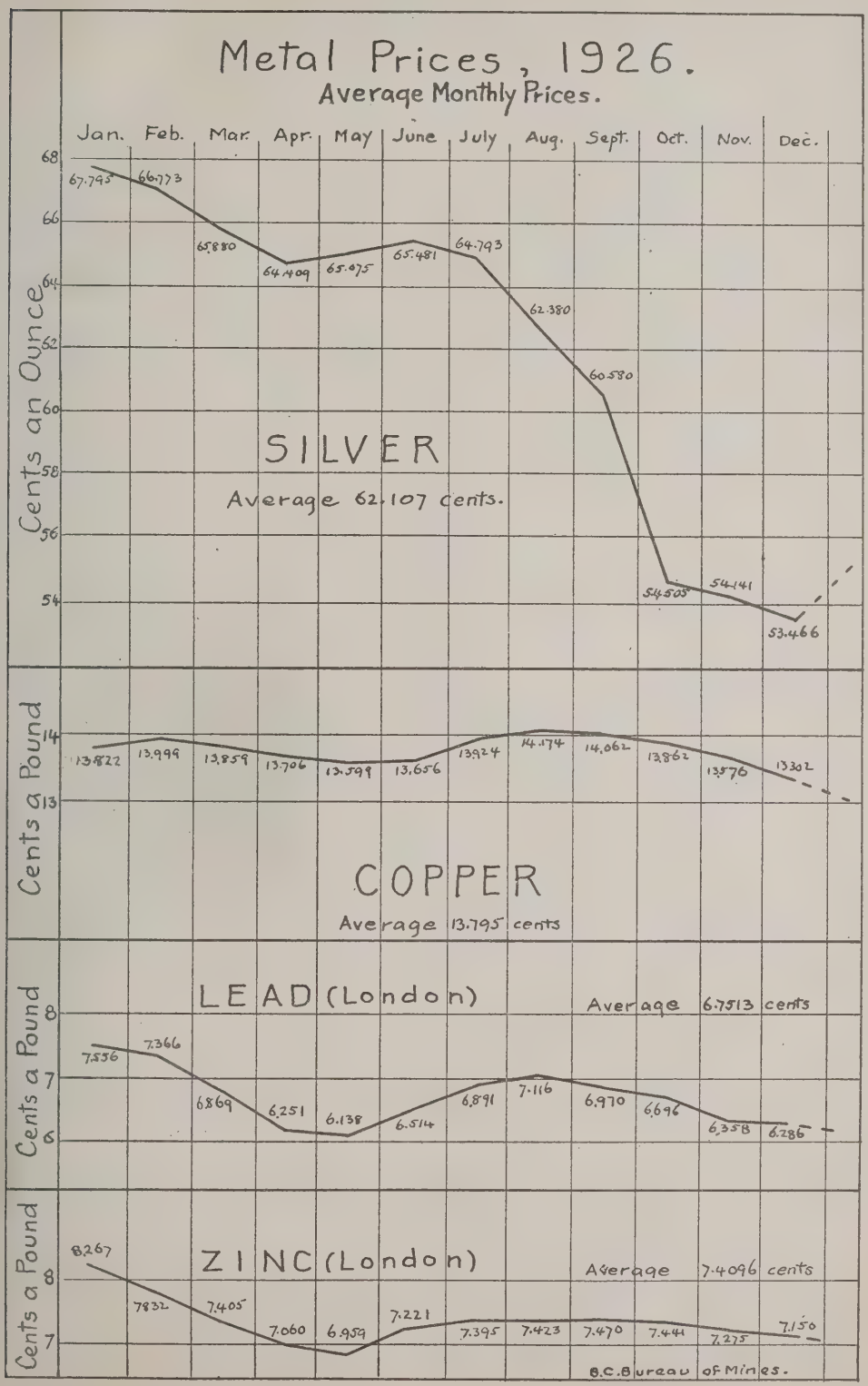
Metal Prices, 1926.
Average Monthly Prices.
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Cents an Ounce
68
66
64
62
60
58
56
54
67.745
66.773
65.880
64.409
65.075
65.481
64.793
62.380
60.580
54.505
54.141
53.466
SILVER
Average 62.107 cents.
Cents a Pound
14
13
13.822
13.999
13.859
13.706
13.599
13.656
13.924
14.174
14.062
13.862
13.576
13.302
COPPER
Average 13.795 cents
Cents a Pound
8
7
LEAD (London)
Average 6.7513 cents
7.556
7.366
6.869
6.251
6.138
6.514
6.891
7.116
6.970
6.696
6.358
6.286
Cents a Pound
8
7
ZINC (London)
Average 7.4096 cents
8.267
7.832
7.405
7.060
6.959
7.221
7.395
7.423
7.470
7.441
7.275
7.150
B.C. Bureau of Mines.

TABLE XV.

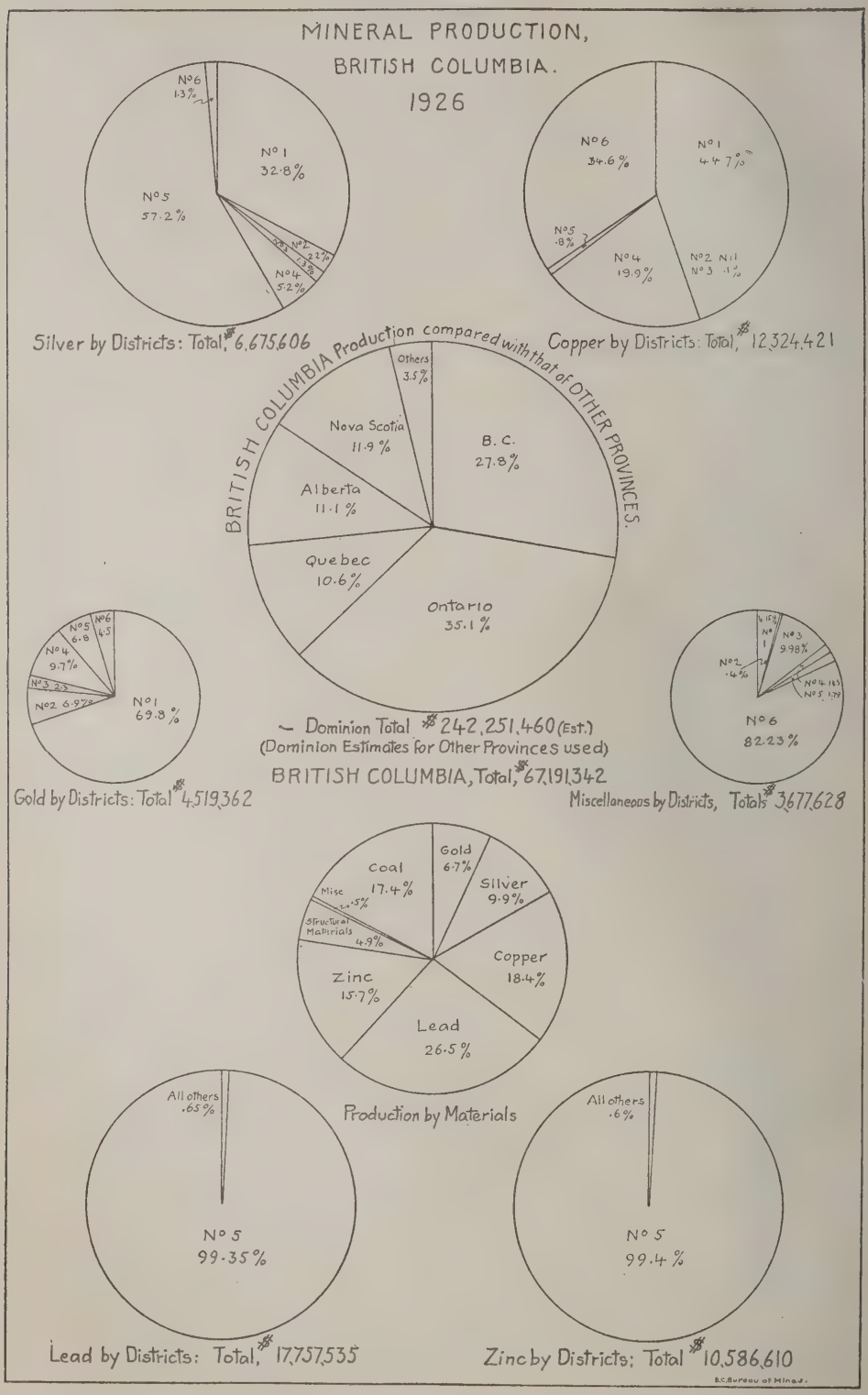
MINERAL PRODUCTION,
BRITISH COLUMBIA.
1926
No 6 1.3%
No 1 32.8%
No 5 57.2%
No 2 2.2%
No 3 .3%
No 4 5.2%
Silver by Districts: Total, $6,675,606
No 6 34.6%
No 1 44.7%
No 5 .8%
No 4 19.9%
No 2 No 3 .1%
Copper by Districts: Total, $12,324,421
BRITISH COLUMBIA Production compared with that of OTHER PROVINCES.
Others 3.5%
Nova Scotia 11.9%
B. C. 27.8%
Alberta 11.1%
Quebec 10.6%
Ontario 35.1%
— Dominion Total $242,251,460 (Est.)
(Dominion Estimates for Other Provinces used)
BRITISH COLUMBIA, Total, $67,191,342
No 5 6.8
No 6 4.5
No 4 9.7%
No 3 2.3
No 2 6.9%
No 1 69.8%
Gold by Districts: Total $4,519,362
No 3 9.98%
No 2 .4%
No 4 1.83
No 5 1.79
No 6 82.23%
Miscellaneous by Districts, Totals $3,677,628
Coal 17.4%
Misc .5%
Structural Materials 4.9%
Gold 6.7%
Silver 9.9%
Copper 18.4%
Zinc 15.7%
Lead 26.5%
Production by Materials
All others .65%
No 5 99.35%
Lead by Districts: Total, $17,757,535
All others .6%
No 5 99.4%
Zinc by Districts: Total $10,586,610
B.C. Bureau of Mines.

TABLE XVI.—Men employed in the Mineral Industry of British Columbia, 1926.

District.	Placer-mining.	Lode-mining.		Total.	In Concentrators.	In Smelters.	Coal-mining.			Structural Materials.		Miscellaneous Minerals.	Total.
		Under.	Above.				Under.	Above.	Total.	Quarries.	Plants.		
No. 1	112	698	410	1,108	98	180	.....	.....	.....	23	.....	13	1,534
No. 2	135	33	126	159	.....	.....	7	.....	7	2	.....	2	305
No. 3	43	59	47	106	3	.....	96	33	129	13	5	92	391
No. 4	4	223	187	410	168	.....	212	140	352	8	4	12	958
No. 5	5	833	700	1,533	385	2,281	962	469	1,431	23	.....	4	5,662
No. 6	.....	760	265	1,025	154	.....	2,480	923	3,403	424	315	1	5,322
Totals	299	2,606	1,735	4,341	808	2,461	3,757	1,565	5,322	493	324	124	14,172

TABLE XVII.—Tonnage, Number of Mines, and Net Value of Lode Minerals.

District.	Tonnage.	No. of Shipping Mines, 1926.	No. of Mines shipping over 100 Tons.	* Net Value of Lode Minerals produced.
No. 1	1,521,202	18	10	$ 8,978,950
No. 2	1,861	5	1	238,615
No. 3	12,679	10	3	166,496
No. 4	722,741	27	7	2,379,824
No. 5	1,360,119	76	33	23,084,201
No. 6	1,156,471	2	1	3,710,527
Totals	4,775,073	138	55	$38,558,613

* This value represents the return to the mine-owner after deducting transportation and treatment charges.

SUMMARY OF STATISTICAL TABLES.

In compiling the Statistical Tables for the 1926 Annual Report the same general arrangement has been followed as in previous years, but the order of the tables has been slightly changed and some new tables have been introduced.

Referring to the preceding Statistical Tables showing the mineral production of the Province, the following is a summary of their contents:—

Table I. shows the total gross value of each mineral product mined in the Province up to the end of 1926, aggregating $988,108,470. From this table it will be seen that coal-mining has produced more than any other separate class of mining, a total of $284,699,133; followed next in importance by copper at $209,967,068, and next in order is lode gold at $126,972,318, with lead in fourth place at $106,976,442.

Table II. shows the value of the total production of the mines of the Province from 1852 to 1895 (inclusive) and for each year from 1896 to 1926 (inclusive). The value of the total mineral production of the Province up to the end of 1926 was $988,108,470.

Table III. gives the quantities in the customary units of measure and the values of the various metals or minerals which go to make up the total of the mineral production of the Province for 1926, and also, for the purpose of comparison, similar data for the two preceding years.

The table shows that in 1926 there were substantial increases in the value of the outputs of silver, zinc, and copper, with small decreases in gold and lead, as compared with the figures for 1925.

Table IV. shows the proportions of the total mineral productions made in each of the various districts into which the Province is divided.

It will be noted that again this year the Eastern District has the honour of first place on the list, followed, in order of importance, by the Western, North-western, Southern, Central, and North-eastern Districts. The Western and Eastern Districts owe a considerable proportion

of their output to the coal-mines situated within their limits, whereas in the other districts the production is chiefly from metal-mining.

The Western District also derives a fair proportion of its production from structural materials, due to the larger cities therein; this year this amounted to $3,009,616, as shown in Table XI.

Table V. shows the statistical record of the placer mines of the Province from 1858 to 1926 and shows a total production of $78,018,548. The output for 1926 was $355,503, an increase, as compared with the previous year, of $75,411.

Table VI. relates entirely to the lode mines of the Province, and shows the quantities and values of the various metals produced each year since the beginning, in 1887, of such mining in the Province. The gross value of the product of these mines to date is $575,215,388; this figure includes the zinc production of 1909 and all subsequent years.

Table VII. gives the details of production of metalliferous mines of the Province for the years 1925 and 1926 and the divisions and districts in which such productions were made, showing the tonnage of ore mined in each district, with its metallic contents and the market value of the contained metals recovered in treatment.

The total tonnage of ore mined in the Province during the year 1926 was 4,775,073 tons, having a gross value of $51,508,031, and, with the placer gold, a total value of $51,863,534.

It will be noted that this metalliferous total shows the substantial increase of $5,383,307, or 11.5 per cent.

Table VIII. contains the statistics of production of the coal-mines of the Province. The total amount of coal produced to the end of 1926 was 68,256,640 tons (2,240 lb.), worth $259,026,533. Of this, 2,330,036 tons was produced in 1926, valued at $11,650,180. In these figures of coal production up to and including 1925 the coal used in making coke is not included, as such coal is accounted for in the figures of output of coke, but the 1926 figure includes coal made into coke.

More detailed statistics as to the coal production of the Province are given in the reports of the Inspection Branch.

Table IX. shows the production of coke from bee-hive ovens in the Province up to the end of 1925.

Table X. is a new table showing complete statistics of the coke industry of the Province. Commencing with 1926, coke will not be considered a primary mineral production, as the coal used in making coke is included and valued in the coal production total. The statistics of the coke industry are, however, given in this table, as they are believed to be of interest to the mineral industry.

Table XI. shows in detail the production of structural materials. The production in 1926 was $3,342,545, as compared with $2,680,072 in 1925. Rock used as flux by smelters does not appear in this table, but will be found in Table XII., "Miscellaneous Minerals."

Table XII. (formerly Table X.) shows the production of "Miscellaneous Minerals" by districts. This branch of the industry is small, but an increasing value of production may be expected in the future.

Table XIII. presents in graphic form the facts shown in figures in the tables, and demonstrates to the eye the rapid growth of mining in the Province, and also the fluctuations to which it has been subject.

From this table it will be seen that coal-mining increased steadily until 1909; from then until 1917 a decrease occurred, since which time progress was upward to 1920 and since then there has been a slight decrease.

The curve of lode production shows on the average a steady growth, but some marked interruptions have occurred; it is satisfactory that a substantial increase in production has occurred in the last five years. The total mineral production also shows a progressive increase, with, however, some large fluctuations.

Table XIV. shows graphically the metal prices for 1926.

Table XV. shows graphically the Dominion mineral production (preliminary estimates for all Provinces except British Columbia) in 1926 by Provinces, and the outputs by minerals and districts of the British Columbia production.

Table XVI. shows the total number of men employed in the mineral industry of the Province. This is the first year that an attempt has been made to gather statistics showing men employed in all branches of the industry. The figures are probably incomplete with regard to a number

of very small operators and leasers working intermittently, but the totals for the different branches indicate very closely the actual men employed.

Table XVII. shows the tonnages of ore and number of shipping mines for each district. A column in this table shows the net value of lode minerals produced by districts. This is the first year that statistics have been collected from which to compile such figures. The net value is the amount given by the mine-owner as being the money value received for his ore; it is the gross value less deductions for transportation, smelting, refining, and marketing charges on the contained metals.

The total net value of $38,558,613 is believed to be approximately correct, although the statistics obtained were not as complete as desired. In many instances small operators and leasers did not give a return of net value, and in all these cases the value was estimated.

REVIEW BY METALS AND MINERALS.

Gold.

Placer Gold. The recovery of placer gold for 1926 was $355,503, of which nearly all was obtained from the Atlin, Cariboo, and Quesnel Divisions. The output shows an increase, as compared with 1925, of $75,411, which is accounted for by increased productions from the Cariboo and Quesnel Divisions.

The Cariboo Division output was increased by a larger production from the Antler Creek dredge of the Kafue Copper Development Company, and in Quesnel Division the Cedar Creek Mining Company made a much larger output than in 1925.

Development and testing of placer properties was actively carried on in many parts of the Province during 1926, particularly in Atlin, Liard, Cariboo, Quesnel, and Similkameen Divisions.

Gold from Lode-mining. The value of lode gold produced in 1926 was $4,163,859, as compared with $4,335,269 in 1925, a decrease of $171,410, or about 4 per cent. Of the total, Portland Canal Division produced $2,567,582, or 61.5 per cent. The decrease in production as compared with 1925 was largely due to the closing in June of the *Surf Inlet* mine. The production of this property was approximately $500,000 less than in 1925. Small decreases in output were also made by the *Nickel Plate* mine and the Rossland properties of the Consolidated Company. These decreases were partially offset by increases in output from the *Engineer*, *Premier*, *Coronation*, *Copper Mountain*, and *Britannia* mines. The reopening of the *Yankee Girl* mine in Nelson Division also added to the gold production.

The following table shows the gold production by Mining Divisions for the years 1925 and 1926:—

Mining Divisions.	1925. Oz.	1926. Oz.
Portland Canal	118,469	124,207
Skeena	35,086	11,128
Osoyoos	19,426	16,280
Trail Creek	14,112	7,600
Nass River	7,484	7,906
Vancouver	8,231	9,995
Lillooet	3,531	4,580
Atlin	1,878	7,757
Nelson	723	6,671
Similkameen	242	3,988
All others	537	1,315
Totals	209,719	201,427

Silver.

The quantity of silver produced in 1926 was 10,748,556 oz., worth $6,675,606, an increase from the production of 1925 in quantity of 3,093,712 oz., or 39.3 per cent., and in value of $1,388,788.

This is the largest silver-output, both in quantity and value, that has ever been made in any year in the Province. The increased production was mainly due to a much larger output from the *Sullivan* mine, but small increases were also made by the *Premier*, *Hidden Creek*,

Copper Mountain, *Britannia*, and Duthie mines, and also the Slocan and Ainsworth Divisions, each with several shippers, showed increases as compared with 1925.

The *Sullivan*, while usually considered a lead-zinc mine, now has the distinction of being the largest silver-producer in Canada.

The market price of silver was well maintained until the last quarter of the year, when a heavy decline took place. The average price for the year was 62.107 cents an ounce, as compared with 69.065 cents in 1925. The average price for the last three months of 1926 was 54.037 cents an ounce, which clearly shows the sharp drop that took place.

The following table shows the silver production by Mining Divisions for the years 1925 and 1926:—

Mining Divisions.	1925. Oz.	1926. Oz.
Fort Steele	3,106,682	4,942,364
Portland Canal	2,392,046	3,092,503
Slocan	856,375	938,880
Greenwood	480,822	408,562
Nass River	390,954	409,470
Omineca	85,888	239,053
Vancouver	131,744	148,113
Trail Creek	32,353	24,705
Ainsworth	79,057	139,832
Similkameen	20,472	141,236
Kamloops	.....	133,815
Nelson	1,652	52,152
All others	76,799	77,871
Totals	7,654,844	10,748,556

Copper.

The amount of copper produced in 1926 was 89,339,768 lb., valued at $12,324,421. This represents, as compared with 1925, an increase of 17,033,336 lb., or 23.5 per cent., and an increase in value of $2,171,152, or 21.4 per cent. The increased production in 1926 was due to a much larger output from the *Copper Mountain* mine of the Granby Company and to some increase by the *Britannia* mine. The combined production of the *Hidden Creek* and *Outsider* mines of the Granby Company was very slightly higher than in 1925. The Granby Company at Anyox in 1926 produced from the *Hidden Creek* and *Outsider* mines 44.5 per cent. of the total copper-output of the Province and the *Britannia* mine 34.5 per cent.

The average price of copper for the year was 13.795 cents a pound, which compares with 14.042 cents for 1925.

The following table shows the production of copper by Mining Divisions for the years 1925 and 1926:—

Mining Divisions.	1925. Lb.	1926. Lb.
Nass River	37,878,408	38,686,513
Vancouver	27,490,854	30,954,479
Similkameen	3,464,891	17,752,253
Trail Creek	1,140,506	751,486
Portland Canal	1,631,755	1,036,113
Skeena	677,422	104,512
All others	22,596	54,412
Totals	72,306,432	89,339,768

Lead.

The amount of lead produced in 1926 was 263,023,937 lb., valued at $17,757,535. This represents, as compared with the previous year, an increase in quantity of 25,124,738 lb., or 10.5 per cent., but owing to a lower average market price for the metal, a decrease in value of $912,794. This is another high record output for lead-mining in the Province.

The increased output was mainly due to a larger production by the *Sullivan* mine, but small increases were made by various other properties.

The average London market price of lead in 1926 was 6.7513 cents a pound, as compared with 7.848 cents in 1925.

The following table shows the production of lead, according to Mining Divisions, for the years 1925 and 1926:—

Mining Divisions.	1925. Lb.	1926. Lb.
Fort Steele	227,306,993	252,050,057
Slocan	4,860,183	4,584,822
Ainsworth	2,760,909	3,442,653
Windermere	754,494	390,680
Portland Canal	839,837	643,061
Nelson	810,877	856,303
Greenwood	258,883	180,495
Omineca	227,610	645,631
All others	79,413	230,235
Totals	237,899,199	263,023,937

The Fort Steele Division continues to head the list, with 95.6 per cent. of the total output of the Province for the year, while Slocan produced 1.75 per cent. of the Provincial production. The large output from the Fort Steele Division comes mainly from the *Sullivan* mine, but it was augmented this year by the *Stemwinder* and *St. Eugene* mines. In Ainsworth Division the largest producer was the *Bluebell* mine and in the Slocan Division the *Silversmith* and *Lucky Jim* mines.

Zinc.

The quantity of zinc produced in 1926 amounted to 142,876,947 lb., valued at $10,586,610. Compared with the 1925 output, this is an increase of 44,619,848 lb., or 45.4 per cent., and an increase in value of $2,832,160, or 36.5 per cent.

The average London price of zinc for the year was 7.4096 cents a pound, as compared with 7.892 cents in 1925.

The largest increase was made by Fort Steele Division, where, in addition to a record production from the *Sullivan* mine, a considerable output was made by the *Stemwinder* and *St. Eugene* mines. Slocan and Ainsworth Divisions also made much larger outputs than in 1925.

The following table shows the production of zinc by Mining Divisions for the years 1925 and 1926:—

Mining Divisions.	1925. Lb.	1926. Lb.
Fort Steele	92,164,850	127,750,444
Slocan	4,413,290	5,793,999
Ainsworth	1,537,774	7,500,374
All others	141,185	1,832,130
Totals	98,257,099	142,876,947

Miscellaneous Minerals.

Iron.—A shipment of 100 tons of bog-iron ore was made from Alta lake to Vancouver. It was used as cleaning material and not as iron ore.

Platinum.—Platinum occurs in irregular and variable amounts in the placer deposits of the Tulameen and Quesnel River sections. Small amounts of crude platinum were recovered in placer operations on the Tulameen river, the output being estimated at $4,258.

Pyrite.—Shipments of pyrite, totalling $16,870, for the making of sulphuric acid, were made from the *Sullivan* mine to the Trail plant and by the *Hidden Creek* mine to Nicholls Chemical Company at Barnett. An increased production of pyrite is expected in 1927.

Arsenic.—From the arsenical-iron-gold concentrates of the *Nickel Plate* mine $11,262 worth of arsenic was recovered at the Tacoma smelter.

Gypsum.—Gypsum produced in 1926 was valued at $154,462, a large increase over that of any previous year. This relatively large output was made principally by the British Columbia Gypsum Company from its property at Falkland. A steady production is expected in the future by this company, which only started shipping in 1926.

Sodium Carbonate.—The production of sodium carbonate made in 1926 was valued at $7,537. The output was made by several shippers from small lakes in the Clinton Division. The mineral is shipped over the Pacific Great Eastern Railway for consumption in Vancouver and district.

Bentonite.—A small shipment of bentonite, valued at $150, was made from a deposit near Princeton. This was shipped to England by the Princeton Collieries Company.

Silicate of Alumina.—From a deposit near Williams Lake shipments of a refractory material, locally called kaolin, valued at $1,900, were made to Vancouver. This material was used as a refractory for furnace-linings and other purposes.

Coal.

The production of coal in 1926 was 2,330,036 long tons, which shows a decrease, as compared with 1925, of 114,256 tons.

Summarizing the Provincial production of coal, the following table shows the output:—

	1923.	1924.	1925.	1926.
Vancouver Island mines .....tons, 2,240 lb.	1,574,663	1,486,332	1,412,757	1,293,175
Nicola-Princeton mines ..... ,,	227,393	226,455	175,474	187,153
Crowsnest mines ..... ,,	740,531	273,518	854,480	848,448
Northern District ..... ,,	400	1,228	1,581	1,260
Total quantity of coal mined ..... ,,	2,542,987	1,987,533	2,444,292	2,330,036

The greater part of the Provincial coal production is still being mined by three companies —the Crow's Nest Pass Coal Company of East Kootenay, the Canadian Collieries (Dunsmuir) and the Western Fuel Corporation of Vancouver island, which mined, collectively, 75 per cent. of the output.

Of the other collieries: In the Coast District, on Vancouver island, the Nanoose Collieries, Limited, produced 27,459 tons; the Granby Company, from its colliery near Cassidy, produced 167,286 tons; and King & Foster, conducting operations at the Old Wellington, made a production of 16,602 tons; and, in addition, the East Wellington Coal Company produced 43,474 tons. In the Nicola Valley section of the district the Middlesboro Colliery Company mined 43,474 tons; the Keystone Coal Company, Limited, produced 7,717 tons; the Princeton-B.C. Colliery Company, Limited, 813 tons; the Coalmont Colliery, 121,458 tons; the Tulameen Valley Coal Company, Limited, produced 13,225 tons; the Sunshine Coal Company produced 40 tons; and the Southern Okanagan Collieries, Limited, produced 426 tons.

In the Northern District the Telkwa Collieries, Limited, shipped 1,260 tons. This property for convenience has been included in the Coast District figures.

In the East Kootenay District, in addition to the Crow's Nest Pass Coal Company, which produced 729,849 tons, the Corbin Coals, Limited, produced 118,599 tons.

The collieries of the Coast District, including the Nicola-Princeton and Telkwa fields, are to be credited for 1926 with about 63 per cent. of the total coal-output.

The output of the collieries of the Province for 1926 was, as already stated, 2,330,036 tons, which includes 25,849 tons of coal added to stock.

Of this amount, there was sold for consumption in Canada, 1,534,749 tons; sold for consumption in the United States, 293,925 tons; sold in other countries, *nil;* making the total coal sales for the year 1,828,674 tons of 2,240 lb.

In addition to the coal sold, there was used by the Crow's Nest Pass Coal Company in the manufacture of coke 142,838 tons, and used under companies' boilers, etc., 176,786 tons; while 155,889 tons was lost in washing and screening.

The following table indicates the markets in which the coal-output of the Province was sold:—

Coal.	Coast District.	Crowsnest Pass District.	Total for Province.
Sold for consumption in Canada.....tons, 2,240 lb.	1,116,025	418,724	1,534,749
Sold for export to United States..... „	96,692	197,233	293,925
Sold for export to other countries..... „	.....	.....	.....
Total coal sales..... „	1,212,717	615,957	1,828,674

Collieries of Coast District.

The collieries of the Coast District, which includes those on Vancouver island and in the Nicola-Princeton fields and one small colliery in Omineca District, mined 1,481,588 tons of coal in 1926, in addition to which 12,129 tons was taken from stock, making 1,493,717 tons distributed from these collieries in 1926. This amount was distributed thus:—

	Tons.	Tons.
Sold as coal in Canada	1,116,025	
Sold as coal in United States	96,692	
Sold as coal in other countries	.....	
Total sold as coal		1,212,717
Used under companies' boilers, etc.		125,111
Lost in washing, etc.		155,889
		1,493,717
Less coal taken from stock		12,129
Gross output		1,481,588

The total coal sales of the Coast collieries for the year show, as compared with the sales of the previous year, a decrease of 64,730 tons, equivalent to about 5 per cent.

The coal sold in Canada by the collieries of the Coast District this year shows a decrease of 18,975 tons, or about 2 per cent. less than the preceding year; the amount exported to the United States was 45,755 tons less than the preceding year, a decrease of about 32 per cent.*

On Vancouver island six companies produced coal in 1926—the Canadian Collieries (Dunsmuir), Limited, the Western Fuel Corporation of Canada, Limited, the Granby Consolidated Mining, Smelting, and Power Company, the Nanoose-Wellington Collieries, Limited, the property operated by King & Foster, and the East Wellington Coal Company; the majority of these companies each operate two, or more, collieries. The combined output of the Island collieries was 1,293,175 tons.

In the Nicola and Princeton coalfields of the Coast District the Middlesboro Colliery Company produced 43,474 tons of coal; the Keystone Coal Company, 7,717 tons; the Princeton Colliery, 813 tons; the Coalmont Collieries, 121,458 tons; the Tulameen Valley coal-mine, 13,225 tons; the Sunshine Coal Company, 40 tons; and the Southern Okanagan Collieries, Limited, produced 426 tons. The total output of this portion of the sub-district was 187,153 tons.

The Telkwa Collieries produced 1,260 tons.

East Kootenay Coalfield.

There were only two companies operating in this district in 1926—the Crow's Nest Pass Coal Company, operating two separate collieries, which together mined 729,849 tons; and the Corbin Coal and Coke Company, which mined 118,599 tons; making an output for the district for 1926 of 848,448 tons of coal.

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* This paragraph appearing in the 1925 Report should read as follows:—
The coal sold in Canada by the collieries of the Coast District this year shows a decrease of 118,305 tons, or about 9 per cent. less than the preceding year; the amount exported to the United States was 3,435 tons more than the preceding year, an increase of about 2 per cent.

The amount of coal actually distributed was 810,470 tons, which, together with 37,978 tons added to stock, shows the total production of 848,448 tons.

The following table shows the distribution made of the coal of this district:—

	Tons.	Tons.
Sold as coal in Canada	418,724	
Sold as coal in United States	197,233	
Total sold as coal		615,957
Used by the Crow's Nest Pass Coal Co. in making coke		142,838
Used by the companies under boilers, etc.		51,675
		810,470
Plus coal added to stock		37,978
Gross output		848,448

STRUCTURAL MATERIALS.

The output of structural materials in 1926 was valued at $3,342,545, an increase of $662,473, or 24.7 per cent., as compared with 1925. This increased production reflects the greater building activity throughout the Province in 1926. It is believed that the statistics as presented are nearly complete, as returns have been received from practically all operators.

Approximately 90 per cent. of the total production of building materials comes from the Coast District and the larger part of this is marketed in the Coast cities.

Increases were made in 1926 as compared with the preceding year in the outputs of limestone, building-stone, crushed rock, pottery, and tile.

Building-stone.—The production of building-stone in 1926 was valued at $174,717. A considerable part of this production consisted of pulp-stones for use in pulp-mills.

Red Brick.—The production of red brick during 1926 was valued at $195,830. The price of brick given by the operators varies from $15 to $20 a thousand, depending on quality.

Firebrick.—The only company producing firebrick in the Province is the Clayburn Company, Limited, with a plant at Clayburn. The fireclay is found here as a bed occurring in bedded rocks of Eocene age. Shales, sandstone, and conglomerates, all but little consolidated, make up this sedimentary series. The shales are quarried or mined for brick-making and one bed is an excellent fireclay. Firebrick is the principal manufactured article produced by this company, but, in addition, considerable quantities of paving-brick, tiles, drain-pipes, fireclay blocks and shapes, and prepared fireclay are made.

Lime.—The manufacture of lime is conducted in a small way at a large number of points in the Province, but only on the Coast has any attempt been made at more extensive operations. In the neighbourhood of Victoria, on Esquimalt harbour, two kilns are in operation. There are two plants on Texada island, where, at Marble bay and at Blubber bay, the limestone being used is of exceptional purity.

The production of lime and limestone for 1926 was valued at $557,049, as compared with $290,065 in 1925.

Sand and Gravel.—The sand and gravel production in 1926 was $331,302, as compared with $364,834 in 1925.

Crushed Rock.—The returns for crushed rock show an output valued at $296,597, as compared with $225,272 in 1925.

Windpass Mountain, North Thompson River.

Gypsum at Falkland, Kamloops M.D.

DEPARTMENT OF MINES.

VICTORIA, B.C.

HON. WILLIAM SLOAN - - - - - - *Minister of Mines.*
ROBERT DUNN - - - - - - - - *Deputy Minister.*
JOHN D. GALLOWAY - - - - - - *Provincial Mineralogist.*
D. E. WHITTAKER - - - - - *Provincial Analyst and Assayer.*
JAMES DICKSON - - - - - - *Chief Inspector of Mines.*

HENRY DEVLIN, *District Inspector*, Nanaimo.
T. R. JACKSON, *District Inspector*, Nanaimo.
ROBERT STRACHAN, *District Inspector*, Fernie.
JOHN MACDONALD, *District Inspector*, Fernie.
JOHN G. BIGGS, *District Inspector*, Merritt.
THOS. J. SHENTON, *Dist. Inspector*, Prince Rupert.
H. H. JOHNSTONE, *Inspector*, Nelson.
JAS. STRANG, *Inspector and Examiner*, Victoria.
H. E. MIARD, *Inspector and Examiner*, Fernie.

Resident Mining Engineers.

GEO. A. CLOTHIER, No. 1 District, Prince Rupert.
DOUGLAS LAY, No. 2 District, Hazelton.
H. G. NICHOLS, No. 3 District, Kamloops.
P. B. FREELAND, No. 4 District, Grand Forks.
A. G. LANGLEY, No. 5 District, Revelstoke.
W. M. BREWER, No. 6 District, Nanaimo.

DEPARTMENT OF MINES.

Mining in British Columbia is administered for the Government by the Department of Mines through the Deputy Minister of Mines and under the direction of the Honourable the Minister of Mines. The Department has charge of all Government offices in connection with the mining industry and, except as may be otherwise provided by Statute, the administration of the laws with respect to all kinds of mining.

Under the "Mineral Act" the Province is divided into forty-two Mining Divisions. Over each of these Divisions there is a Mining Recorder and over groups of Divisions of varying sizes there are Gold Commissioners. Of Mining Recorders, inclusive of Sub-Mining Recorders, there are 121, and of Gold Commissioners, 25. These figures give an insight into the extensive provision which has been made to assure prospectors and mining men generally that, wherever they may find themselves within British Columbia's 370,000 square miles of territory, they at all times will be within reasonable reach of a Mining Recorder, or a Deputy Mining Recorder, or a Gold Commissioner ready to extend to them all the privileges to which they are entitled, as free miners, under the "Mineral," "Placer," or other Mining Acts.

A sketch of the respective duties of the above-enumerated officers may be of interest. The Gold Commissioner in many cases also is Government Agent and in the latter capacity may represent every department of public service. Under the mining laws he has all the powers of a Mining Recorder and sometimes discharges the duties of both offices. One of his responsible duties is the issuing of certificates of improvement in respect of mineral claims for which Crown grants are sought; another is the consideration and the granting or otherwise of placer-mining leases; and in addition he has quasi-judicial authority in regard to questions which arise from time to time under both the "Mineral Act" and the "Placer-mining Act." A Gold Commissioner may have one or more Mining Divisions under his supervision.

As to Mining Recorders and Sub-Mining Recorders, the Acts clearly explain their duties. They are the officials first looked for on the discovery and location of placer-ground or mineral claims. They must see that all records are properly made and that the order of priority is carefully observed in respect of the same. They issue Free Miners' Certificates and must see that a proper return of the same is made to the Department.

It is this comprehensive system of administration which, broadly speaking, constitutes the Department of Mines, headquarters of which, under the Honourable the Minister of Mines, are in Victoria. From the head office the activities of the officers in the different parts of the Province

are directed and co-ordinated. Care must be given the application of the mining laws to divergent problems in order that, whilst justice is accorded in all cases, in none are the vital principles underlying the Statute departed from. This is one of the most important of the duties of the Department functioning under the direct supervision of the Minister.

There also is the duty of administering the "Mines Development Act," 1916, under the terms of which the sum of $944,623.85 was expended in the construction and the maintenance of mine roads, trails, and bridges from May 31st, 1916, to December 31st, 1926. As a result, mines, found upon inspection by Government Mining Engineers to merit assistance, have benefited by the building of 625 miles of road and 1,002 miles of trail and the maintenance of 511 miles of road and 1,370 miles of trail. This means that a grand total of 3,508 miles of roads and trails have been opened and kept open in order that the development of mining might be facilitated. This, then, is another phase of the work of the Department, which maintains its touch with the field through six Resident Mining Engineers appointed under the "Mineral Survey and Development Act."

All who are interested in mining in British Columbia should make themselves acquainted with the "Mineral Survey and Development Act." It is interesting not only because of the appointment of Resident Mining Engineers over six Mineral Survey Districts, who are required to apply themselves constantly to the making of a survey of the mineral resources of their respective districts, to prepare a report each year dealing with their activities and observations, and to extend every possible assistance to mining men and prospectors. There are other features; perhaps the most important, in view of recent increased public financial support of mining enterprises, being contained in sections 16 and 17 of the Act. Briefly these sections make it necessary for a mining company to forward a copy of its prospectus to the Resident Mining Engineer of the district in which its mining property is situated. The Engineer's duty is to compare statements contained in the prospectus with the conditions as he knows them to exist on the ground. If he finds misstatements or discrepancies calculated to mislead an investor, the Minister is notified. He makes further investigation. The company may be communicated with and asked to withdraw the statements complained of; or, if the case is one that seems to demand more extreme measures, the Minister may authorize the public advertisement of the facts through the Provincial Gazette and the public press.

The foregoing will serve to convey a general idea of the activities of the administrative headquarters of the Department in Victoria and those branch offices situated in the large centres of population as well as in the most remote parts of the Province over which jurisdiction is exercised.

If you want information as to the mining laws of the Province—the most liberal and stable ever drafted—apply to the Department. If you are contemplating investment in the stock of a British Columbia mining company, do not fail to get the last Annual Report of the Minister of Mines. References to practically every mine or mining prospect in British Columbia are contained in these Annual Reports. If no such references were made last year, the desired information may have been given in the Annual Report of some previous year. It is possible that the slight trouble of asking for a search will be well rewarded. The Department is prepared to render this service on application.

Communications from anywhere in Canada, the United States, or South America, seeking either copies of Annual Reports or mining maps, or any other information concerning mining in the Province, will have immediate attention if directed to:—

HON. WM. SLOAN,
Minister of Mines,
Victoria, B.C.,
Canada.

Applications for information, as above set out, from Great Britain, or any other European country, will receive prompt attention by being referred to the Agent-General for British Columbia, British Columbia House, 1 and 3 Regent Street, London, S.W. 1, England.

INSPECTION BRANCH.

The Inspection Branch of the Department of Mines consists of a Chief Inspector, seven District Inspectors, two examiners, who are also Acting-Inspectors, and four Instructors in Mine-rescue Work.

The Inspectors have jurisdiction over both coal and metalliferous mines within the boundaries of their respective districts. Every part of all operating coal-mines are inspected at least once every month, and metalliferous mines as often as time will permit, generally once in every sixty days, to see that general conditions are good for the safety and health of the workmen employed, and that the Coal and Metalliferous Mines Regulation Acts are complied with.

The Mine-rescue Stations are under the jurisdiction of the Inspection Branch. Four are maintained at the principal mining centres for the purpose of supplementing, in case of need, the colliery installations of mine-rescue apparatus, and also for the purpose of training the holders of certificates in the use of mine-rescue apparatus. In cases of emergency these stations are available for the use of any trained corps of mine rescuers, duly qualified medical practitioners, or corps trained in the work of first aid to the injured, subject to the order of an Inspector. All certificated officials who are physically fit, and not less than 3 per cent., or such number as the Chief Inspector may deem sufficient, of the workmen at each colliery must be trained in the use of mine-rescue apparatus.

The examining boards for granting certificates of competency to coal-mine officials and coal-miners are under the jurisdiction of the Inspection Branch. The Chief Inspector and the two examiners form the board for coal-mine officials for the whole of the Province, and the two examiners and the District Inspector form the board for granting certificates to coal-miners within their respective districts.

A District Inspector may grant a provisional certificate to a coal-miner between examinations for a period not exceeding sixty days.

Blasting certificates of competency to miners at metalliferous mines are granted by the Inspectors of Mines.

A section of the Annual Report of the Minister of Mines contains the reports of the officials of the Inspection Branch.

GOLD COMMISSIONERS AND MINING RECORDERS.

Mining Division.	Location of Office.	Gold Commissioner.	Mining Recorder.	Sub-Recorder.
Atlin	Atlin	C. L. Monroe	C. L. Monroe	J. G. Garrett.
Sub-office	Telegraph Creek			H. W. Dodd.
Sub-office	Haines (U.S.)		(Com. for taking Affidavits)	Risdon M. Odell.
Sub-office	Juneau (U.S.)		Ditto	Harold E. Brown.
Stikine	Telegraph Creek	H. W. Dodd	H. W. Dodd	
Sub-office	Boundary	H. W. Dodd	H. W. Dodd	W. R. Overend.
Liard	Telegraph Creek	H. W. Dodd	H. W. Dodd	
Sub-office	Porter			Chas. H. Smith.
Sub-office	McDame Creek			Mike Larsen.
Sub-office	Fort St. John			F. W. Beatton.
Skeena	Prince Rupert	N. A. Watt	N. A. Watt	
Sub-office	Kitimat			C. M. Carlson.
Sub-office	Copper City			L. G. Skinner.
Sub-office	Terrace			L. H. Kenny.
Sub-office	Rosswood			Mrs. C. Warner.
Sub-office	Stewart (Portland Canal)			J. P. Scarlett.
Nass River	Anyox	N. A. Watt	R. M. McGusty	
Sub-office	Aiyansh	N. A. Watt		A. F. Priestly.
Sub-office	Alice Arm			Mrs. L. Cummings.
Portland Canal	Stewart	N. A. Watt (at Prince Rupert)	J. P. Scarlett	
Bella Coola	Prince Rupert	N. A. Watt	N. A. Watt	
Sub-office	Bella Coola			Brynild Brynildsen.
Sub-office	Bella Bella			
Sub-office	Ocean Falls			Geo. H. Hill.
Queen Charlotte	Queen Charlotte	N. A. Watt	John L. Barge	
Sub-office	Jedway			Isaac Thompson.
Sub-office	Masset			J. C. S. Dunn, M.D.
Sub-office	Lockeport			William Morgan.
Omineca	Smithers	Stephen H. Hoskins	Jas. E. Kirby	
Sub-office	Fort Grahame			H. Ravenal.
Sub-office	Finlay Forks			H. M. Gibson.

GOLD COMMISSIONERS AND MINING RECORDERS—*Continued.*

Mining Division.	Location of Office.	Gold Commissioner.	Mining Recorder.	Sub-Recorder.
Omineca—*Continued.*				
Sub-office	Fort St. James			Alex. C. Murray.
Sub-office	Manson Creek			W. B. Steele.
Sub-office	Telkwa			T. J. Thorp.
Sub-office	Prince George			Geo. Milburn.
Sub-office	Hudson Hope			J. L. Ruxton (Acting).
Sub-office	Fort St. John			F. W. Beatton.
Sub-office	Copper City			L. G. Skinner.
Sub-office	Terrace			L. H. Kenny.
Sub-office	Fort Fraser			J. D. Moore.
Sub-office	Pacific			T. H. McCubbin.
Sub-office	Hazelton			G. A. Wyman.
Sub-office	Burns Lake			L. Mulvaney.
Sub-office	Usk			Jas. L. Bethurem.
Sub-office	Tatla Landing			E. G. McCorkell.
Peace River	Fort St. John	S. H. Hoskins (at Smithers)	F. W. Beatton	
Sub-office	Prince George			G. Milburn.
Sub-office	Finlay Forks			H. M. Gibson.
Sub-office	Hudson Hope			J. L. Ruxton (Acting).
Sub-office	Pouce Coupe			Fred. Fraser.
Cariboo	Barkerville	L. J. Price	L. J. Price	Mrs. L. J. Price.
Sub-office	Quesnel	L. J. Price		E. C. Lunn.
Sub-office	Prince George	L. J. Price		Geo. Milburn.
Sub-office	McBride	L. J. Price		P. Carr.
Quesnel	Williams Lake	L. C. Maclure	L. C. Maclure	
Sub-office	Quesnel			E. C. Lunn.
Sub-office	Likely			A. B. Campbell.
Sub-office	Barkerville			L. J. Price.
Clinton	Clinton	R. J. A. Dorrell	R. J. A. Dorrell	
Sub-office	Williams Lake			L. C. Maclure.
Sub-office	S. Fork, Bridge River	W. Haylmore	W. Haylmore	W. Haylmore.
Lillooet	Lillooet	E. F. Little	E. F. Little	R. W. Melton.
Sub-office	S. Fork, Bridge River			W. Haylmore.
Kamloops	Kamloops	E. Fisher	E. Fisher	R. F. Ure.
Sub-office	Chu Chua			George Fennell.
Sub-office	Vavenby			A. McDonald.
Ashcroft	Ashcroft	E. Fisher (at Kam.)	W. C. Adams	Miss F. H. C. Wilson.
Sub-office	Lytton			W. Greenwood.
Nicola	Merritt	E. Fisher (at Kam.)	W. H. Boothroyd	
Yale	Yale	E. Fisher (at Kam.)		
Sub-office	Hope	E. Fisher (at Kam.)	D. A. Hazelton	Mrs. D. A. Hazelton.
Similkameen	Princeton	H. Beech	H. Beech	
Sub-office	Hedley			R. E. Baxter.
Vernon	Vernon	R. Ross Napier	R. Ross Napier	
Greenwood	Greenwood	S. B. Hamilton	S. B. Hamilton	
Sub-office	Vernon			
Sub-office	Rock Creek			Owen Wheeler.
Sub-office	Beaverdell			C. D. Collen.
Grand Forks	Grand Forks	Chas. Mudge	Chas. Mudge	
Osoyoos	Penticton	W. R. Dewdney	W. R. Dewdney	
Sub-office	Keremeos			L. H. Patten.
Sub-office	Hedley			R. E. Baxter.
Sub-office	Fairview			J. R. Brown.
Golden	Golden	G. E. Sanborn	G. E. Sanborn	H. C. Moore.
Windermere	Wilmer	G. E. Sanborn (at Golden)	E. M. Sandilands	
Fort Steele	Cranbrook	P. H. McCurrach	P. H. McCurrach	
Sub-office	Fernie			E. T. Cope.
Ainsworth	Kaslo	Ronald Hewat	A. McQueen	A. W. Anderson.
Sub-office	Howser			W. Simpson.
Sub-office	Trout Lake			Roy V. Jacobson.
Sub-office	Poplar			Arthur G. Johnston.

GOLD COMMISSIONERS AND MINING RECORDERS—*Continued.*

Mining Division.	Location of Office.	Gold Commissioner.	Mining Recorder.	Sub-Recorder.
Slocan	New Denver	Ronald Hewat (at Kaslo)	Angus McInnes	
Sub-office	Sandon			W. J. Parham.
Slocan City	Slocan	Ronald Hewat	T. McNeish	
Trout Lake	Trout Lake	Ronald Hewat	Roy V. Jacobson	
Nelson	Nelson	J. Cartmel	J. Cartmel	
Sub-office	Creston			H. W. McLaren.
Sub-office	Ymir			Wm. Clark.
Sub-office	Sheep Creek			Geo. Leece.
Sub-office	Salmo			M. C. Donaldson.
Arrow Lake	Nakusp	J. Cartmel (at Nelson)	Walter Scott	
Sub-office	Vernon			R. Ross Napier.
Revelstoke	Revelstoke	Wynfield Maxwell	C. J. Aman	
Lardeau	Beaton	Wynfield Maxwell (at Revelstoke)	Ernest Roberts	
Trail Creek	Rossland	W. H. Reid	W. H. Reid	
Nanaimo	Nanaimo	L. A. Dodd	L. A. Dodd	
Sub-office	Ladysmith			J. A. Knight.
Sub-office	Alert Bay			Ernest H. Robinson.
Sub-office	Vananda			Leonard Raper.
Sub-office	Granite Bay			Henry Twidle.
Alberni	Alberni	A. G. Freeze	A. G. Freeze	
Clayoquot	Clayoquot	A. G. Freeze (at Alberni)	W. T. Dawley	
Quatsino	Quatsino	A. G. Freeze (at Alberni)	Ed. Evensen	
Victoria	Victoria	R. J. Steenson	R. J. Steenson	
New Westminster	New Westminster	F. C. Campbell	I. Wintemute	
Sub-office	Harrison Lake			L. A. Agassiz.
Sub-office	Chilliwack			Chas. J. Whittaker.
Vancouver	Vancouver	John Mahony	A. P. Grant	

OFFICE STATISTICS FOR MINING DIVISIONS.

NORTH-WESTERN DISTRICT (No. 1).

ATLIN MINING DIVISION.

REPORT BY C. L. MONROE, GOLD COMMISSIONER, ATLIN.

I have the honour to submit the office statistics of the Atlin Mining Division for the year ended December 31st, 1926.

Free miners' certificates (individual)	293
Free miners' certificates (company)	5
Placer records	8
Placer rerecords	85
Placer lease applications	10
Placer leases granted	4
Certificates of work (leases)	103
Leaves of absence	16
Bills of sale, etc. (placer)	10
Bills of sale, etc. (hydraulic)	11
Bills of sale, etc. (mineral)	32
Mineral records	40
Certificates of improvements	4
Certificates of work (mineral)	178
Filings	19

Revenue.

Free miners' certificates	$1,805 50
Mining revenue	6,915 40
Total	$8,720 90

STIKINE AND LIARD MINING DIVISION.

REPORT BY H. W. DODD, GOLD COMMISSIONER, TELEGRAPH CREEK.

I have the honour to submit the office statistics of the Stikine and Liard Mining Divisions for the year ended December 31st, 1926.

Free miners' certificates (individual)	320
Free miners' certificates (company)	2
Placer claims recorded	28
Placer claims rerecorded	15
Mineral claims recorded	31
Placer leases issued	26
Certificates of work (mineral)	16
Certificates of work (placer)	28
Assignments and bills of sale	21
Powers of attorney, etc.	102
Filings	21

Revenue.

Free miners' certificates	$1,694 50
Mining receipts	8,043 30
Total	$9,737 80

SKEENA AND BELLA COOLA MINING DIVISIONS.

REPORT BY NORMAN A. WATT, GOLD COMMISSIONER, PRINCE RUPERT.

I have the honour to submit the office statistics of the Skeena and Bella Coola Mining Divisions for the year ended December 31st, 1926.

Free miners' certificates	265
Mining receipts issued	178
Mineral claims recorded	94
Placer leases	2
Certificates of work (mining)	157
Certificates of work (placer)	2
Filings	24

Revenue.

Free miners' certificates	$1,447 75
Mining receipts	1,176 25
Total	$2,624 00

NASS RIVER MINING DIVISION.

REPORT BY R. M. MCGUSTY, MINING RECORDER, ANYOX.

I have the honour to submit the office statistics of the Nass River Mining Division for the year ended December 31st, 1926.

Free miners' certificates	210
Mineral claims recorded	195
Certificates of work (mineral)	443
Conveyances, etc.	114
Filings	33

Revenue.

Free miners' certificates	$1,332 25
Mining receipts	2,199 95
Total	$3,532 20

PORTLAND CANAL MINING DIVISION.

REPORT BY J. P. SCARLETT, MINING RECORDER, STEWART.

I have the honour to submit the office statistics of the Portland Canal Mining Division for the year ended December 31st, 1926.

Free miners' certificates (individual)	371
Free miners' certificates (company)	15
Mineral claims recorded	452
Certificates of work issued	1,012
Bills of sale, etc., recorded	257
Certificates of improvements recorded	75
Abandonments	2
Filings	90

Revenue.

Free miners' certificates	$ 3,299 00
Mining receipts	7,275 25
Total	$10,574 25

QUEEN CHARLOTTE MINING DIVISION.

REPORT BY JOHN L. BARGE, MINING RECORDER, QUEEN CHARLOTTE.

I have the honour to submit the office statistics of the Queen Charlotte Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued	44
Mining records (locations) issued	8
Mining records (placer) issued	1
Certificates of work (quartz) issued	34
Certificates of work (placer) issued	6
Records entered	35
Records filed	2

Revenue.

Mining receipts	$383 25
Free miners' certificates	203 00
Total	$586 25

NORTH-EASTERN DISTRICT (No. 2).

CARIBOO MINING DIVISION.

REPORT BY L. J. PRICE, GOLD COMMISSIONER, BARKERVILLE.

I have the honour to submit the office statistics of the Cariboo Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued	227
Mineral claims recorded	46
Certificates of work (mineral)	91
Placer claims recorded and rerecorded	35
Applications for placer leases	46
Placer-mining leases issued	43
Certificates of work (placer leases)	87
Powers of attorney recorded	14
Conveyances and agreements recorded	57
Leases in force	166

Revenue.

Free miners' certificates	$ 1,332 25
Mining receipts, general	11,925 69
Total	$13,257 94

QUESNEL MINING DIVISION.

REPORT BY L. C. MACLURE, GOLD COMMISSIONER, WILLIAMS LAKE.

I have the honour to submit the office statistics of the Quesnel Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued (individual)	315
Mineral claims recorded	70
Certificates of work issued (mineral)	65
Placer claims recorded and rerecorded	10
Applications for placer-mining leases	66
Placer-mining leases issued	43
Certificates of work issued (placer)	86

Powers of attorney recorded	52
Conveyances and agreements recorded	34

Revenue.

Free miners' certificates	$ 1,838 00
Mining receipts, general	9,655 25
Total	$11,493 25

OMINECA MINING DIVISION.

Report by S. H. Hoskins, Gold Commissioner, Smithers.

I have the honour to submit the office statistics of the Omineca Mining Division for the year ended December 31st, 1926.

Free miners' certificates (ordinary)	565
Free miners' certificates (company)	5
Free miners' certificates (special)	1
Mineral claims recorded	584
Certificates of work recorded and issued (mineral)	633
Certificates of work recorded and issued (placer)	49
Placer claims recorded and rerecorded	14
Bills of sale, mining agreements, etc., recorded	170
Powers of attorney recorded	51
Mining documents filed	57
Certificates of improvements recorded and issued	2
Applications for placer-mining leases (Omineca)	35
Placer-mining leases issued (Omineca)	9
Applications for placer-mining leases (Peace River)	1
Placer-mining leases issued (Peace River)	1

Revenue.

Free miners' certificates	$ 3,183 50
Mining receipts	6,967 65
Total	$10,151 15

CENTRAL DISTRICT (No. 3).

LILLOOET MINING DIVISION.

Report by E. F. Little, Gold Commissioner, Lillooet.

I have the honour to submit the office statistics of the Lillooet Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued	133
Mineral claims recorded	86
Certificates of work	164
Placer claims recorded	1
Placer-mining leases issued	28
Placer-mining leases, certificates of work	28
Conveyances, etc., recorded	80

Revenue.

Free miners' certificates	$1,071 75
Mining receipts	4,154 33
Total	$5,226 08

CLINTON MINING DIVISION.

REPORT BY R. A. DORRELL, GOLD COMMISSIONER, CLINTON.

I have the honour to submit the office statistics of the Clinton Mining Division for the year ended December 31st, 1926.

Free miner's certificates	84
Mineral claims recorded	165
Certificates of work	90
Placer claims recorded	4
Leases issued	23
Bench leases in existence	23
Creek leases in existence	2
Dredging leases in existence	2
"Mineral Act," bills of sale, etc.	11
"Placer Act," assignments, etc.	17
Certificates of work (placer)	7
Notices to group	7
Filings	5
Leave of absence	1
Revocation of powers of attorney	2

Revenue.

Free miners' certificates	$ 382 25
Mining receipts, general	1,993 65
Total	$2,375 90

NICOLA MINING DIVISION.

REPORT BY W. H. BOOTHROYD, MINING RECORDER, MERRITT.

I have the honour to submit the office statistics of the Nicola Mining Division for the year ended December 31st, 1926.

Free miners' certificates	106
Mineral claims recorded	44
Certificates of work (mineral)	91
Certificates of work (placer)	17
Bills of sale (mineral)	13
Bills of sale (placer)	1
Agreements recorded (mineral)	2
Agreements recorded (placer)	3
Placer leases issued	22
Filings	1

Revenue.

Free miners' certificates	$ 421 00
Mining receipts, general	2,008 95
Total	$2,429 95

VERNON MINING DIVISION.

REPORT BY R. ROSS NAPIER, GOLD COMMISSIONER, VERNON.

I have the honour to submit the office statistics of the Vernon Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued (individual)	292
Free miners' certificates issued (special)	4

Mineral claims recorded	100
Certificates of work issued (mineral)	89
Placer-mining leases in force	41
Certificates of work (placer)	49
Powers of attorney recorded	5
Conveyances and agreements recorded	25

Revenue.

Free miners' certificates	$1,381 25
Mining receipts, general	2,197 40
Total	$3,578 65

YALE MINING DIVISION.

REPORT BY D. A. HAZELTON, MINING RECORDER, HOPE.

I have the honour to submit the office statistics of the Yale Mining Division for the year ended December 31st, 1926.

Free miners' certificates (ordinary)	221
Free miners' certificates (company)	6
Mineral claims recorded	131
Placer claims recorded	13
Certificates of work (mineral)	164
Certificates of work (placer)	25
Placer leases in existence	34
Bills of sale recorded (mineral)	9
Bills of sale recorded (placer)	4
Powers of attorney	17
Filings	17

Revenue.

Free miners' certificates	$1,410 50
Mining receipts	2,292 10
Total	$3,702 60

ASHCROFT MINING DIVISION.

REPORT BY W. C. ADAM, MINING RECORDER, ASHCROFT.

I have the honour to submit the office statistics of the Ashcroft Mining Division for the year ended December 31st, 1926.

Mineral claims	108
Certificates of work	50
Free miners' certificates issued	106
Conveyances recorded	7
Records filed	2
Applications to group	8
Placer claims	4
Rerecords	2
Leaves of absence	4
Placer leases	7
Conveyances (lease)	1

KAMLOOPS MINING DIVISION.

REPORT BY E. FISHER, GOLD COMMISSIONER, KAMLOOPS.

I have the honour to submit the office statistics of the Kamloops Mining Division for the year ended December 31st, 1926.

Free miners' certificates (ordinary)	418
Mineral claims recorded	178
Mineral claims (partnership)	11
Placer rerecords	2
Placer leases issued	24
Certificates of work (mineral)	260
Certificates of work (placer leases)	12
Bills of sale	74
Powers of attorney	18
Filings	55

Revenue.

Mining receipts	$3,044 05
Free miners' certificates	2,041 50
Total	$5,085 55

SOUTHERN DISTRICT (No. 4).

GREENWOOD MINING DIVISION.

REPORT BY S. B. HAMILTON, GOLD COMMISSIONER, GREENWOOD.

I have the honour to submit the office statistics of the Greenwood Mining Division for the year ended December 31st, 1926.

Free miners' certificates	189
Locations (quartz)	140
Locations (placer)	2
Certificates of work	140
Certificates of work (placer)	1
Leases of reverted Crown-granted mineral claims	34
Bills of sale	17
Agreements	7
Filings	28
Miscellaneous	4

GRAND FORKS MINING DIVISION.

REPORT BY CHAS. MUDGE, MINING RECORDER, GRAND FORKS.

I have the honour to submit the office statistics of the Grand Forks Mining Division for the year ended December 31st, 1926.

Free miners' certificates	83
Records of locations	28
Certificates of work	61
Bills of sale	7
Filings	4
Certificates of improvements	1
Crown grants	2
Leases of reverted mineral claims	9

OSOYOOS MINING DIVISION.

REPORT BY W. R. DEWDNEY, GOLD COMMISSIONER, PENTICTON.

I have the honour to submit the office statistics of the Osoyoos Mining Division for the year ended December 31st, 1926.

Special free miners' certificates	2
Free miners' certificates (ordinary)	235
Locations (quartz)	116
Certificates of work	93
Conveyances	19
Agreement	1
Filings	17
Certificates of improvements	3
Leases of reverted claims	5

SIMILKAMEEN MINING DIVISION.

REPORT BY H. BEECH, GOLD COMMISSIONER, PRINCETON.

I have the honour to submit the office statistics of the Similkameen Mining Division for the year ended December 31st, 1926.

Free miners' certificates	333
Mineral claims recorded	147
Certificates of work (mineral)	246
Certificates of work (leases)	92
Bills of sale recorded (mineral)	33
Bills of sale recorded (leases)	47
Placer leases issued	90
Forfeited claims leased	25
Powers of attorney recorded	45

EASTERN DISTRICT (No. 5).

GOLDEN MINING DIVISION.

REPORT BY G. E. SANBORN, GOLD COMMISSIONER, GOLDEN.

I have the honour to submit the office statistics of the Golden Mining Division for the year ended December 31st, 1926.

Free miners' certificates (ordinary)	129
Free miners' certificates (special)	1
Mineral claims recorded	56
Placer leases issued	16
Certificates of work (mineral)	56
Certificates of work (placer)	5
Bills of sale, agreements, etc.	67

Revenue.

Free miners' certificates	$ 572 25
Mining receipts	2,221 50
Total	$2,793 75

WINDERMERE MINING DIVISION.

Report by E. M. Sandilands, Mining Recorder, Wilmer.

I have the honour to submit the office statistics of the Windermere Mining Division for the year ended December 31st, 1926.

Free miners' certificates (ordinary)	99
Free miners' certificates (special)	2
Claims recorded (quartz)	108
Certificates of work (quartz)	120
Bills of sale, bonds, agreements, powers of attorney, etc.	74

FORT STEELE MINING DIVISION.

Report by P. H. McCurrach, Gold Commissioner, Cranbrook.

I have the honour to submit the office statistics of the Fort Steele Mining Division for the year ended December 31st, 1926.

Free miners' certificates	351
Locations (quartz)	829
Locations (placer)	3
Certificates of work (quartz)	1,054
Certificates of work (placer)	27
Leases (placer)	6
Bills of sale, agreements, etc. (mineral and placer)	750
Certificates of improvements	69
Leases of reverted Crown-granted mineral claims	16
Notices to group mineral claims, etc.	63
Applications under "Phosphate-mining Act"	53

Revenue.

Free miners' certificates	$ 2,640 20
Mining receipts, general	10,273 00
Total	$12,913 20

REVELSTOKE MINING DIVISION.

Report by Charles J. Aman, Mining Recorder, Revelstoke.

I have the honour to submit the office statistics of the Revelstoke Mining Division for the year ended December 31st, 1926.

Free miners' certificates	158
Free miners' certificates (company)	1
Locations recorded	77
Certificates of work issued	158
Leases of Crown-granted mineral claims	24
Placer claims recorded	2
Groupings recorded	6
Bills of sale, agreements, and powers of attorney	22

Revenue.

Free miners' certificates	$ 951 50
Mining receipts (sundry)	1,262 00
Leases of forfeited Crown-granted mineral claims	575 00
Crown grants to reverted claims	746 00
Placer leases	207 00
Total	$3,741 50

LARDEAU MINING DIVISION.

REPORT BY E. ROBERTS, MINING RECORDER, BEATON.

I have the honour to submit the office statistics of the Lardeau Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued	68
Free miners' certificates issued (company)	2
Certificates of work	121
Locations recorded	86
Bills of sale	10
Notices to group	23
Search of records	4
Copy of records	2
Filings	2
Revokement	1

Revenue.

Free miner's certificates	$ 537 75
Mining receipts	562 25
Total	$1,100 00

AINSWORTH MINING DIVISION.

REPORT BY R. HEWAT, GOLD COMMISSIONER, KASLO.

I have the honour to submit the office statistics of the Ainsworth Mining Division for the year ended December 31st, 1926.

Free miners' certificates	163
Mineral claims recorded	94
Certificates of work recorded	260
Bills of sale, agreements, etc.	35
Dredging leases issued	3
Leases of reverted Crown-granted mineral claims issued	86

SLOCAN MINING DIVISION.

REPORT BY ANGUS MCINNES, MINING RECORDER, NEW DENVER.

I have the honour to submit the office statistics of the Slocan Mining Division for the year ended December 31st, 1926.

Free miners' certificates	136
Claims recorded	46
Certificates of work recorded	89
Transfers	4

Revenue.

Total receipts	$5,014 90

SLOCAN CITY MINING DIVISION.

REPORT BY THOS. MCNEISH, MINING RECORDER, SLOCAN.

I have the honour to submit the office statistics of the Slocan City Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued	50
Locations recorded	70
Certificates of work issued	63
Bills of sale and agreements	14
Notices to group	5

Revenue.

Free miners' certificates	$229 50
Mining receipts, general	377 55
Total	$606 55

TROUT LAKE MINING DIVISION.

REPORT BY R. V. JACOBSON, MINING RECORDER, TROUT LAKE.

I have the honour to submit the office statistics of the Trout Lake Mining Division for the year ended December 31st, 1926.

Free miners' certificates (individual)	49
Locations recorded (mineral)	73
Locations recorded (placer)	3
Certificates of work recorded	138
Bills of sale recorded	28
Notices to group	24

Revenue.

Free miners' certificates	$228 75
Mining receipts	655 00
Total	$883 75

NELSON MINING DIVISION.

REPORT BY J. CARTMEL, GOLD COMMISSIONER, NELSON.

I have the honour to submit the office statistics of the Nelson Mining Division for the year ended December 31st, 1926.

Free miners' certificates (individual)	491
Free miners' certificates (company)	4
Free miners' certificates (special)	1
Claims recorded (mineral)	392
Claims rerecorded (placer)	3
Certificates of work issued	400
Agreements of sale, transfers, etc.	142
Notices to group filed	40
Certificates of improvements issued	5
Leases of forfeited Crown-granted mineral claims issued	53

Revenue.

Free miners' certificates	$2,991 25
Mining receipts (general)	3,108 25
Mining receipts (lease fees, forfeited Crown-granted mineral claims)	1,325 00
Total	$7,424 50

ARROW LAKE MINING DIVISION.

REPORT BY WALTER SCOTT, MINING RECORDER, NAKUSP.

I have the honour to submit the office statistics of the Arrow Lake Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued	48
Mineral claims recorded	33
Certificates of work recorded	16
Conveyances recorded	2
Options recorded	9

TRAIL CREEK MINING DIVISION.

REPORT BY W. H. REID, GOLD COMMISSIONER, ROSSLAND.

I have the honour to submit the office statistics of the Trail Creek Mining Division for the year ended December 31st, 1926.

Free miners' certificates (individual)	130
Free miners' certificates (company)	3
Free miners' certificates (special)	1
Locations	29
Certificates of work	71
Bills of sale	9
Notices to group	7
Leases of unworked Crown-granted claims	1

WESTERN DISTRICT (No. 6).

ALBERNI MINING DIVISION.

REPORT BY A. G. FREEZE, GOLD COMMISSIONER, ALBERNI.

I have the honour to submit the office statistics of the Alberni Mining Division for the year ended December 31st, 1926.

Mineral claims recorded	4
Certificates of work recorded	13
Free miners' certificates issued	38
Placer leases issued	3
Bills of sale	1
Leases of reverted Crown-granted claims	6

Revenue.

Free miners' certificates	$150 25
Mining receipts, general	257 75
Total	$408 00

CLAYOQUOT MINING DIVISION.

REPORT BY W. T. DAWLEY, MINING RECORDER, CLAYOQUOT.

I have the honour to submit the office statistics of the Clayoquot Mining Division for the year ended December 31st, 1926.

Mineral claims recorded	21
Certificates of work	18
Free miners' certificates issued	22
Notice to group	2

Revenue.

Free miners' certificates	$ 97 50
Mining receipts, general	122 75
Total	$220 25

QUATSINO MINING DIVISION.

REPORT BY ED. EVENSON, MINING RECORDER, QUATSINO.

I have the honour to submit the office statistics of the Quatsino Mining Division for the year ended December 31st, 1926.

Mineral claims recorded	1
Certificates of work	24
Bills of sale	1
Certificates of improvements	28
Notices to group on file	1
Free miners' certificates (ordinary)	28

Revenue.

Free miners' certificates	$128 25
Mining receipts, general	134 25
Total	$262 50

NANAIMO MINING DIVISION.

REPORT BY L. A. DODD, GOLD COMMISSIONER, NANAIMO.

I have the honour to submit the office statistics of the Nanaimo Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued	141
Mineral claims recorded	156
Certificates of work	166
Bills of sale, etc., recorded	38
Placer leases issued	2

Revenue.

Free miners' certificates	$ 954 50
Mining receipts, general	1,638 75
Total	$2,593 25

VICTORIA MINING DIVISION.

REPORT BY R. J. STEENSON, GOLD COMMISSIONER, VICTORIA.

I have the honour to submit the office statistics of the Victoria Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued (individual)	380
Free miners' certificates issued (company)	28
Free miners' certificates issued (special)	3
Mineral claims recorded	24
Certificates of work recorded	21
Placer claims recorded	4
Leases of reverted Crown-granted mineral claims	1
Powers of attorney recorded	4
Placer-mining leases	2

Revenue.

Free miners' certificates	$4,520 00
Mining receipts, general	1,495 51
Total	$6,015 51

VANCOUVER MINING DIVISION.

REPORT BY A. P. GRANT, MINING RECORDER, VANCOUVER.

I have the honour to submit the office statistics of the Vancouver Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued	1,935
Free miners' certificates issued (company)	66
Special miners' certificates issued	5
Special company certificates issued	1
Quartz claims recorded	44
Certificates of work recorded	159
Surveys recorded as work	6
Notices to group and documents filed	25
Conveyances recorded	21
Powers of attorney recorded	6
Certificates of improvements recorded	11

Revenue.

Mining receipts	$ 631 30
Free miners' certificates	13,011 00
Total	$13,642 30

NEW WESTMINSTER MINING DIVISION.

REPORT BY I. WINTEMUTE, MINING RECORDER, NEW WESTMINSTER.

I have the honour to submit the office statistics of the New Westminster Mining Division for the year ended December 31st, 1926.

Free miners' certificates issued	205
Mineral claims recorded	132
Certificates of work issued	109
Conveyances, etc., recorded	26
Notices to group filed	8
Placer leases issued	1

Revenue.

Free miners' certificates	$ 983 50
Mining receipts	843 85
Total	$1,827 35

BUREAU OF MINES.

Report by John D. Galloway, Provincial Mineralogist.

The permanent staff of the Bureau of Mines consists of John D. Galloway, Provincial Mineralogist; D. E. Whittaker, Provincial Analyst and Provincial Assayer; J. B. Adams, Laboratory Assistant; H. T. Nation, general office assistant; and H. Pearson, clerk.

The Bureau of Mines is a branch of the Department of Mines, which collects, compiles, and supplies to the public much technical information regarding mining and mineral properties in the Province. At the close of each year the Annual Report of the Minister of Mines is prepared by the staff of the Bureau under the supervision of the Provincial Mineralogist. This Annual Report contains detailed statistics of mineral production compiled by the Bureau, reports by each of the six Resident Mining Engineers on their respective districts, and the reports of the Inspection Branch. The reports of the Resident Engineers have also been printed as separate bulletins for the years 1924, 1925, and 1926. Special bulletins descriptive of mining are issued at intervals.

The Bureau has a well-equipped Assay and Analytical Laboratory. Mineral and rock samples are examined qualitatively without charge. This is done for the purpose of encouraging the search for new mineral-bearing areas and to assist prospectors and others by enabling them to have determined, free of cost, the nature and probable value of any rock they may find.

The Bureau also has an excellent and comprehensive collection of British Columbia ores and mineral samples on exhibit for the public in its Mineral Museum.

With greater activity in mining the work of the Bureau has increased considerably during recent years. The routine work of the office consists of supplying to the public much information regarding mining in the Province, directing prospectors to promising areas, supplying statistical information, interdepartmental reports, etc.

During the field season of 1926 the Provincial Mineralogist made a number of special examinations involving field-trips in the southern interior and coastal sections of the Province. A careful examination was made of the mineral properties in the vicinity of Greenwood.

During 1926 arrangements were made with the Dominion Bureau of Statistics whereby the British Columbia Bureau of Mines will in future collect all Provincial mineral statistics required by both Bureaus. By this arrangement the mine-owner is only required to fill out one form in duplicate instead of making two separate returns as heretofore.

An agreement has also been reached whereby the same average metal prices will be used by both Bureaus in valuing the outputs of metals. The chief divergence in the past has been in adopting different market quotations for lead and zinc, but in future the same prices will be used.

At the present time the practice of the Dominion Bureau is to use refinery and smelter production to arrive at the yearly output of metals; the British Columbia Bureau uses mine production figures. This of course causes a difference in the yearly quantities of metals produced as reported by the two Bureaus, but the variation is only slight. The method in use by the British Columbia Bureau of Mines has been followed for many years and was adopted in order to compile the mineral production for the Province by Mining Divisions and Districts. These detailed statistics of mineral production are shown in the Annual Reports of the Minister of Mines in comprehensive sets of tables. It is believed that the statistics as given, based on mine production, are informative and useful to those engaged in the mineral industry of the Province. No change in the present general system of statistics is therefore contemplated.

By the co-operation so far effected it is expected that the mineral statistics of the Province, as reported by the two Bureaus, will not differ in any marked degree. The work of collecting, compiling, and presenting mineral statistics is somewhat complex, in which many arbitrary rulings or methods must be used. Having accomplished a measure of co-operation between the Dominion and British Columbia Bureaus in regard to statistics, it is felt that a good start has been made and further adjustments will be arranged in the future.

The attention of prospectors and miners is drawn to the following definition of mineral contained in section 2 of the British Columbia "Mineral Act":—

> "'Mineral' means all valuable deposits of gold, silver, platinum, iridium, or any of the platinum group of metals, mercury, lead, copper, iron, tin, zinc, nickel, aluminium, antimony, arsenic, barium, bismuth, boron, bromine, cadmium, chromium, cobalt, iodine, magnesium, manganese, molybdenum, phosphorus, plumbago, potassium, sodium, strontium, sulphur, tungsten, fluorine, vanadium, radium, uranium, lithium, thorium, titanium (or any combination of the aforementioned elements with themselves or with any other elements), asbestos, emery, mica, and mineral pigments; but limestone, marble, clay, or any building-stone shall not be considered as mineral within the meaning of this Act."

Limestone, marble, clay, and building-stone are acquired under the British Columbia "Land Act."

It should be noted that in 1925, for purposes of administration, the mineral tricalcium phosphate was taken out of the "Mineral Act." Under the "Phosphate-mining Act, 1925," deposits of tricalcium phosphate may be acquired by the location of phosphate claims one square mile in area.

Geological Information.

By an arrangement made at the time the Province of British Columbia entered Confederation, all geological investigations and mapping in the Province were to be carried on by the Geological Survey of Canada; this agreement has been fully adhered to by the Dominion Government and has proved of great benefit to the mining industry of the Province. Each year a number of geological parties are kept in the field and in the aggregate a vast amount of information is available to the prospector and the mining engineer in the many excellent reports and maps covering British Columbia which have been issued by the Geological Survey of Canada.

For some years a branch office of the Geological Survey has been maintained in Vancouver, where copies of maps and reports on British Columbia can be obtained. The officer in charge of this office is Dr. Victor Dolmage and the address is 512 Winch Building, Vancouver, B.C.

COAL ANALYSES.

In the 1920 Annual Report an extensive list of analyses of British Columbia coals was given. The list was first published in 1909, but was revised in the 1920 Report.

The following list is to be considered as supplementary to that published in 1920. It consists of samples taken by the Inspectors of Mines from the operating collieries of the Province, and shows the analyses of the different grades of coal as mined and prepared for sale at the various collieries of the Province. All analyses were made by the Government Laboratory.

TABLE OF ANALYSES OF BRITISH COLUMBIA COAL.

Sample No.	Date received.	Colliery.	Grade of Coal.	Proximate Analysis.							Coking Quality.
				Moisture.	Volatile Combustible Matter.	Fixed Carbon.	Ash.	Sulphur.	British Thermal Units.	Moisture Loss after 4 Days.	
	1926.	Canadian Collieries (D.), Ltd.—		%	%	%	%	%		%	
9301	Feb. 5	No. 5 South Wellington mine, Douglas seam	Washed pea	1.50	31.50	50.50	16.50	0.55	11,656	3.00	Good.
9302	„ 5	No. 5 South Wellington mine, Douglas seam	Washed nut	1.10	34.30	55.20	9.40	0.35	13,020	1.50	Good.
9303	„ 5	No. 5 South Wellington mine, Douglas seam	Washery fines	1.40	34.50	53.60	10.50	0.55	13,020	4.50	Good.
9304	„ 5	No. 5 South Wellington mine, Douglas seam	Lump	1.40	34.20	55.40	9.00	0.26	13,175	1.50	Good.
9305	„ 5	Extension mine, Wellington seam	Washery fines	1.30	34.60	57.10	7.00	0.46	13,485	1.50	Good.
9306	„ 5	Extension mine, Wellington seam	Washed pea	1.20	33.00	52.30	13.50	0.46	12,555	7.50	Good.
9307	„ 5	Extension mine, Wellington seam	Washed nut	1.40	33.80	54.90	9.90	0.40	12,710	3.50	Good.
9308	„ 5	Extension mine, Wellington seam	Lump	1.40	35.30	56.70	6.60	0.40	13,640	1.50	Good.
		East Wellington Coal Co.—									
9309	„ 5	Wellington seam	Washery fines	2.00	34.90	54.40	8.70	0.40	12,710	1.50	Good.
9310	„ 5	Wellington seam	Lump	2.00	34.80	54.70	8.50	0.50	12,865	1.00	Good.
9311	„ 5	Wellington seam	Washed pea	1.90	34.50	52.90	10.70	0.50	12,555	0.50	Good.
9312	„ 5	Wellington seam	Washed nut	2.00	35.10	52.70	10.20	0.50	12,710	0.50	Good.
		Canadian Collieries (D.), Ltd.—									
9313	„ 5	No. 4 mine, Comox district	Crushed lump	0.30	24.90	63.40	11.40	0.88	12,555	4.00	Good.
9314	„ 5	No. 5 mine	Crushed lump	0.40	30.60	56.50	12.50	0.54	12,555	1.00	Good.
9315	„ 5	No. 5 mine	Comox crushed nut	0.40	25.70	64.30	9.60	0.92	12,710	1.00	Good.
9316	„ 5	No. 5 mine	Comox pea	0.30	25.40	62.20	12.10	0.82	12,710	1.00	Good.
		Western Fuel Corporation, Ltd.—									
9317	„ 5	Wakesiah mine, Wellington seam	Lump, domestic	0.80	33.60	53.60	12.00	1.22	11,625	1.00	Good.
9318	„ 5	No. 1 mine, Newcastle seam	Lump, domestic	0.20	33.50	54.00	10.50	1.12	11,780	1.00	Good.
9319	„ 5	No. 1 mine, Douglas seam	Lump, steam	1.30	34.40	56.30	8.00	1.04	12,555	1.00	Good.
9320	„ 5	Reserve mine, Douglas seam	Lump, steam	0.80	32.40	58.80	8.00	3.62	12,245	3.00	Good.
9321	„ 5	Reserve mine, Douglas seam	Washed slack	1.10	32.10	53.30	13.50	1.10	11,780	.....	Poor.
9322	„ 5	Reserve mine, Douglas seam	No. 1 nut	1.20	33.30	56.00	9.50	0.90	12,245	1.00	Good.
9323	„ 5	Reserve mine, Douglas seam	No. 2 nut	1.10	31.00	54.50	13.40	3.92	11,625	1.00	Good.
9324	„ 5	Reserve mine, Douglas seam	Pea	0.70	32.50	53.40	13.40	1.00	11,780	1.00	Good.
		Crow's Nest Pass Coal Co.—									
9325	„ 5	Michel, No. 1 seam		0.90	21.50	72.50	5.10	0.40	13,640	3.00	Good.
9326	„ 5	Michel, No. 1 seam	Slack	0.70	20.80	68.40	10.10	0.40	12,865	4.00	Good.
9327	„ 5	Michel, No. 3 seam	Slack	0.60	19.30	70.40	9.70	0.70	12,710	3.00	Good.
9328	„ 5	Michel, No. 3 seam	Coal	0.70	19.70	74.10	5.50	0.90	13,795	3.00	Good.
9329	„ 5	Michel, No. 8 seam	Slack	0.60	22.00	73.00	4.40	0.60	13,640	.....	Good.
9330	„ 5	Michel, No. 8 seam	Coal	0.90	23.30	73.20	2.60	0.60	14,105	4.00	Good.

		Granby Consolidated M.S. & P. Co.—									
9331	Feb. 5	Cassidy	Washed pea and slack	1.10	31.10	52.80	15.00	0.50	11,780	9.00	Good.
9332	„ 5	Cassidy	Washed nut	1.10	33.10	56.80	9.00	0.50	12,865	3.00	Good.
9333	„ 5	Cassidy	Lump	1.50	30.70	57.30	10.50	0.50	12,555	2.00	Good.
9334	„ 5	Cassidy	Washed middlings	1.20	25.60	41.90	31.30	0.70	8,990	15.00	Poor.
		Telkwa Collieries, Ltd.—									
9335	„ 5	Goat Creek mine, No. 1 East level	Coking	0.80	28.20	62.60	8.40	1.80	13,020	3.50	Good.
9336	„ 5	Goat Creek mine, No. 2 East level	Coking	0.50	28.90	61.60	8.80	1.80	13,020	3.00	Good.
		Crow's Nest Pass Coal Co.—									
9337	„ 5	Coal Creek, from tipple	Market, screened	1.00	17.50	74.00	7.50	0.46	13,950	3.00	Good.
9338	„ 5	Coal Creek, from tipple	Market, run of mine	0.80	19.20	69.60	10.40	0.60	13,640	2.00	Good.
9339	„ 5	Coal Creek, from tipple	Market, slack	0.70	17.50	71.80	10.00	0.60	13,330	2.00	Good.
9340A	„ 5	Coal Creek, No. 1 East, No. 1 seam; full height of seam, Main level		0.70	19.40	74.90	5.00	0.80	14,260	0.50	Good.
9341	„ 5	No. 3 mine, No. 2 seam, No. 9 Right room, No. 3 slope; full height of seam, Main level		0.60	18.00	74.40	7.00	0.40	13,640	0.50	Good.
		Middlesboro Collieries, Ltd.—									
9342	„ 5	No. 1 seam		3.30	30.00	56.10	10.60	0.70	12,090	2.00	Fair.
9343	„ 5	No. 2 North seam (new prospect)		5.30	29.40	56.60	8.70	0.60	12,090	6.00	Poor.
9344	„ 5	No. 4 East seam		3.40	32.00	58.10	6.50	0.60	12,710	3.00	Fair.
9345	„ 5	No. 5 seam		4.90	31.30	56.80	7.00	0.70	12,555	4.00	Fair.
9346	„ 5	No. 6 seam		6.60	29.40	54.80	9.20	0.75	11,780	3.00	Poor.
9347	„ 5	No. 6 seam		4.10	30.10	51.50	14.30	0.40	11,160	2.50	Non-coking.
		Coalmont Collieries, Ltd.—									
9348	„ 5	No. 3 mine, Bottom bench, counter-level		6.00	26.60	54.20	13.20	0.40	11,470	6.00	Non-coking.
9349	„ 5	No. 3 mine, Upper bench, counter-level		5.20	29.70	58.50	6.60	0.30	11,780	1.00	Non-coking.
9350	„ 5	No. 4 mine, Upper bench, face of slope		5.30	30.10	57.00	7.60	0.28	11,780	.....	Non-coking.
9351	„ 5	No. 4 mine, Bottom bench, face of slope		5.60	29.60	57.20	7.60	0.30	11,780	1.00	Non-coking.
9352	„ 5	Keystone Coal Co., No. 6 mine		4.70	31.90	54.10	9.30	0.40	11,780	.....	Non-coking.
9353	„ 5	Sunshine Coal Co., Merritt		2.80	37.50	55.10	4.60	0.40	13,175	.....	Good.
		Tulameen Valley Coal Co., Princeton—									
9354	„ 5	Lower bench, face of main coal		15.50	30.60	49.20	4.70	0.30	10,540	2.00	Non-coking.
9355	„ 5	Top bench, face of Main level		15.90	29.90	49.70	4.50	0.33	10,540	3.00	Non-coking.
		Princeton-B.C. Colliery Co., Ltd.—									
9356	„ 5	Lower bench		16.40	28.50	49.70	5.40	0.40	10,540	3.00	Non-coking.
9357	„ 5	Top bench		15.20	28.50	47.10	9.20	0.70	10,075	3.00	Non-coking.
	1927.	Corbin Coal & Coke Co., Ltd.—									
9358	Jan. 25	No. 4, run of mine		1.20	18.30	66.10	14.40	0.06	11,880	.....	Poor.
9359	„ 25	No. 6, run of mine		0.80	17.10	67.70	14.40	0.30	12,245	1.00	Good.
9360A	„ 25	Washed coal, 4- by 1-inch		0.60	16.90	67.90	14.60	0.08	12,090	.....	Good.
9361	„ 25	¾-inch slack, unwashed		0.70	19.30	66.50	13.50	0.22	12,245	1.00	Fair.
9362	„ 25	Washed steam		0.30	17.40	68.00	14.30	0.12	12,400	1.00	Good.
		Corbin Coals, Ltd.—									
9363	„ 25	Washed steam, 1½-inch		0.50	20.10	64.40	15.00	0.13	12,090	5.50	Good.
9364	„ 25	Washed furnace, 4- by 1½-inch		0.60	19.00	67.00	13.40	0.12	12,245	2.00	Good.
9365	Feb.	Tulameen coal, J.D.G.		17.70	30.40	41.90	10.00	0.23	9,470	.....	Non-coking.
9366	„	Coke from Victoria Gas Works		3.00	3.40	70.20	23.40	0.75	10,307	.....	

ASSAY OFFICE.

Report by D. E. Whittaker, Provincial Assayer.

During the year 1926 there were made by the staff in the Government Assay Office 4,895 assays or quantitative determinations and 414 analyses; of these the majority were for the Bureau of Mines or for the other departments, for which no fees were received.

The fees collected by the office were as follows:—

Fees for analyses	$ 367 50
Fees for assaying	254 93
Fees for assayers' examinations	75 00
Total cash receipts	$ 697 43

Determinations and examinations made for other Government departments for which no fees were collected—

Attorney-General's Department	$ 317 00
Agricultural Department	840 00
Board of Health	340 00
Treasury Department	69 30
Forest Branch	1,535 00
Other departments	570 00
	$3,671 30
Value of work done outside of Mines Department work	$4,368 73

The value of gold melted during the year 1926 was $9,719.60 in 23 lots, as against $478.80 in 10 lots in 1925.

Free Determinations.

In addition to the above quantitative work, about 2,000 qualitative determinations, or tests, were made in connection with the identification and classification of rocks or minerals sent to the Bureau for a report; for these no fees were charged, as it is the established custom of the Bureau to examine and test qualitatively, without charge, samples of minerals sent in from any part of the Province, and to give a report on the same. This has been done for the purpose of encouraging the search for new or rare minerals and ores, and to assist prospectors and others in the discovery of new mining districts, by enabling them to have determined, free of cost, the nature and probable value of any rock they may find. In making these free determinations, the Bureau asks that the locality from which the sample was obtained be given by the sender.

EXAMINATIONS FOR ASSAYERS.

Report by D. E. Whittaker, Secretary of Board of Examiners.

I have the honour, as Secretary, to submit the Annual Report for the year 1926 of the Board of Examiners for Certificates of Competency and Licence to Practise Assaying in British Columbia, as established under the "Bureau of Mines Act," R.S.B.C. 1924.

A meeting of the Board of Examiners was held on May 22nd and on November 27th, 1926. Two candidates applied for examination on November 22nd, and one passed the examination on that date. The Board recommended that a certificate be issued to him. Four candidates applied for exemption under section 2, subsection (2), of the Act. The Board recommended that certificates be issued to three of the candidates.

In accordance with the recommendation of the Board, certificates have been duly issued by the Honourable the Minister of Mines to the four candidates.

List of Assayers holding Provincial Certificates of Efficiency under the "Bureau of Mines Act," R.S.B.C. 1924.

(Only the holders of such certificates may practise assaying in British Columbia.)

Under section 2, subsection (1).

Adams, J. B.	Victoria.
Archer, E. G.	Anyox.
Armstrong, N.	Vancouver.
Ayres, D. A.	
Austin, John W.	Vancouver.
Backus, Geo. S.	Britannia Beach.
Baker, C. S. H.	
Bajus, N. J.	Vancouver.
Barke, A. C.	
Beilby, E. B.	Vancouver.
Bernard, Pierre	Monte Christo, Wash.
Bishop, Walter	
Boulding, J. D.	Vancouver.
Broughton, F. W.	Vancouver.
Buchanan, James	Trail.
Buehman, A. S.	Trail.
Campbell, Colin	New Denver.
Carmichael, Norman	New York.
Church, George B.	
Clarke, E. R.	Vancouver.
Cobeldick, W. M.	Scotland.
Collison, H.	Cobham, England.
Comrie, George H.	Vancouver.
Cotton, G. W.	Trail.
Craufurd, A. J. F.	Rossland.
Crerar, George	
Crompton, S. V.	Vancouver.
Cruickshank, G.	
Davidson, J. R.	Vancouver.
Day, Athelstan	Duncan.
Dedolph, Ed.	
Dockrill, Walter R.	Chemainus.
Dunn, G. W.	Rossland.
Farquhar, J. B.	Vancouver.
Fingland, John J.	Kaslo.
Gardner, C. S.	Victoria.
Grosvenor, F. E.	Vancouver.
Hamilton, Wm. J.	Anyox.
Hannay, W. H.	Trail.
Harsant, R. C. C.	
Hart, P. E.	
Hawkins, Francis	Lake Hill.
Hawes, F. B.	Vancouver.
Hodgson, A. R.	Anyox.
Hurter, C. S.	Prince Rupert.
Irwin, George E.	Vancouver.
John, D.	Haileybury, Ont.
Kiddie, Geo. R.	California.
King, R.	
Kitto, Geoffrey B.	Victoria.
Lang, T. F.	Vancouver.
Langley, A. G.	Revelstoke.
Laucks, I. F.	Seattle.
Lee, Fred E.	Trail.
Lee, Geo. M.	
Ley, Richard H.	Victoria.
Levy, Frank	
Lindsay, W. W.	Kimberley.
Locke, V. F.	Vancouver.
Longworth, F. J.	Boyds, Wash.
Manning, S. M.	Trail.
Martin, S. J.	
Marsh, Richard	Spokane, Wash.
Marshall, H. Jukes	Vancouver.
Marshall, William S.	Ladysmith.
Meale, Eric A.	East Helena, Mont.
Merrifield, T. T.	Trail.
Miles, Arthur D.	
Milne, A. S.	Vancouver.
Mitchell, Charles T.	Copper Cliff, Ont.
McCormick, Alan F.	Ruth, Nevada.
MacDonald, Alec C.	Vancouver.
MacDonald, J. S.	Vancouver.
McIntosh, J. H.	Bamberton.
McLellan, R. D.	Vancouver.
Morgan, Richard	Trail.
Nicholls, Frank	Norway.
Okell, S. E.	Vancouver.
Parker, Robt. H.	
Parsenow, W. L.	
Perkins, Walter G.	
Pickard, T. D.	Vancouver.
Pirrie, Noble W.	Victoria.
Poole, H. W.	Vancouver.
Prior, C. E.	Hedley.
Puder, H. F. H.	Vancouver.
Raht, K.	Trail.
Richmond, Leigh	Duncan.
Robertson, T. R.	Vancouver.
Rodgers, Ch. B.	
Rogers, G. J.	Knutsford.
Rombauer, A. B.	Butte, Mont.
Schroeder, Curt A.	
Segsworth, Walter	Toronto, Ont.
Shepherd, G. H.	North Vancouver.
Sharpe, Bert N.	
Sharples, H.	Vancouver.
Shore, J. T.	Vancouver.
Sim, Chas. John	Monte Carlo.
Sloan, Wm.	Vancouver.
Snyder, Blanchard M.	
Steven, Wm. Gordon	
Stimmel, B. A.	Trail.
Stockly, Galt	Princeton.
Sundberg, Gustave	Mexico City.
Tally, Robert E.	Spokane, Wash.
Taylor, E. S.	Vancouver.
Taylor, H. L.	Vancouver.
Teed, A. J.	Vancouver.
Thirkell, V. R.	Vancouver.
Thomas, Percival W.	Vancouver.
Tretheway, John H.	
Turner, H. A.	Vancouver.
Vance, John F. C. B.	Vancouver.
Van Agnew, Frank	Siberia.
Vaughan-Williams, V. L.	California.
Wales, Roland T.	
Watson, Wm. J.	Ladysmith.
Watson, Thomas	Vancouver.
Welsh, J. Cuthbert	Butte, Mont.
Wells, Ben T.	
West, Geo. G.	Vancouver.
Wenerstrom, L. H.	Anyox.
Whittaker, Delbert E.	Victoria.
Widdowson, E. Walter	Nelson.
Willemar, Douglas R.	Masset.
Williams, W. A.	Vancouver.
Williams, Eliot H.	
Williams, J. R.	Vancouver.
Wimberley, S. H.	Nevada, U.S.A.
Youngs, T. N.	Victoria.

Under section 2, subsection (2).

Archer, Allan	
Blaylock, Selwyn G.	Trail.
Bissett, D. G.	Trail.
Bolton, George E.	Silverton.
Brennan, Charles Victor	Britannia Beach.
Browne, R. J.	Rossland.
Browne, P. J.	Nelson.
Bryant, Cecil M.	Victoria.
Bryden, James	Trail.
Burwash, N. A.	
Cavers, Thomas W.	
Clothier, George A.	Prince Rupert.
Cole, Arthur A.	Cobalt, Ont.
Cole, G. E.	Rossland.
Cole, L. Heber	Ottawa, Ont.
Conway, E. J.	Vancouver.
Coo, Cecil William	Toronto, Ont.
Coulthard, R. W.	
Cowans, Frederick	
Dawson, V. E.	Trail.
Dempster, R. C.	Rossland.
Dempster, A. S.	Rossland.
Dixon, Howard A.	Toronto, Ont.
Eardley-Wilmot, V. L.	Ottawa.
Pellew-Harvey, Wm.	Vancouver.
Fotheringham, D. F.	Trail.
Galbraith, M. T.	
Gilman, Ellis P.	Vancouver.
Gray, Stanley	
Green, J. T. Raoul	Blairmore, Alta.
Guess, George A.	Toronto, Ont.
Harding, Wilson M.	
Heal, John H.	
Hearn, Roy D.	Trail.
Hilliary, G. M.	Idaho, U.S.A.
Howells, J. O.	Calgary, Alta.
Johnston, William Steele	Lachine, Que.
Kaye, Alexander	Vancouver.
Kendall, George	Vancouver.
Kidd, G. L.	Edmonton, Alta.
Kilbourne, Geo. H.	Victoria.
Lathe, Frank E.	Montreal.
Lay, Douglas	Hazelton.
Lewis, Francis B.	South Africa.
Mellish, Albert Henry	Premier.
Merrit, Charles P.	
Murphy, C. J.	St. Catharines, Ont.
Musgrave, W. N.	England.
McArthur, Reginald E.	
McBean, K. D.	Trail.
McDiarmid, S. S.	
McGinnis, Wm. C.	Queen Charlotte Ilds.
McKay, Robt. B.	Vancouver.
McLellan, John	Skidegate.
McMurtry, Gordon O.	
McNab, J. A.	Thompson, Nevada.
McPhee, W. B.	
McVicar, John	Edmonton, Alta.
Maclennan, F. W.	
Moran, P. J.	Vancouver.
Newton, W. E.	Sandon.
Norrie, James P.	Kirkland Lake, Ont.
Oliver, Chas. E.	Vancouver.
Oughtred, S. W.	Ainsworth.
Outhett, Christopher	Kamloops.
Pemberton, W. P. D.	Victoria.
Reid, J. A.	Cobalt, Ont.
Ritchie, A. B.	Nelson.
Roaf, J. R.	
Roscoe, Harold M.	Anyox.
Rose, J. H.	Thompson, Nevada.
Rutherford, R. C.	Trail.
Sampson, E. H. S.	Riondel.
Scott, John Mitchell	Stewart.
Scott, Oswald Norman	
Shannon, S.	
Sharpe, G. P.	Midland, Ont.
Shorey, P. M.	Trail.
Sloan, David	Three Forks.
Stevens, F. G.	Mexico.
Stewart, A. G.	Vancouver.
Stroud, J. E. C.	Anyox.
Sullivan, Michael H.	Kellogg, Idaho.
Sutherland, T. Fraser	
Sutherland, Wm.	Glasgow, Scotland.
Swinney, Leslie A. E.	
Thompson, W. K.	Trail.
Thomson, H. Nellis	Anaconda, Mont.
Watson, A. A.	
Watson, Henry	
Weir, William	Anyox.
White, E. Grove	Stewart.
Willis, F. S.	Trail.
Winslow, R. H.	Vancouver.
Wilson, Ridgeway R.	Victoria.
Workman, Ch. W.	
Wright, Richard	Rossland.
Wynne, Llewellyn C.	
Yuill, H. H.	

Under section 2, subsection (3).

Carmichael, Herbert	Victoria.
Galloway, J. D. (Provincial Mineralogist.)	Victoria.
Harris, Henry	Tasmania.
Hedley, Robt. R.	Vancouver.
Kiddie, Thos.	California.
Marshall, Dr. T. R.	London, England.
McKillop, Alexander	Vancouver.
Pellew-Harvey, Wm.	London, England.
Robertson, Wm. Fleet (Provincial Mineralogist.) (Retired Feb., 1925.)	Victoria.

PREVIOUSLY ISSUED UNDER THE "BUREAU OF MINES ACT, 1897," SECTION 12.

Thompson, James B.	Vancouver.

REPORTS OF RESIDENT MINING ENGINEERS.

"MINERAL SURVEY AND DEVELOPMENT ACT."

During the session of 1917 the Hon. the Minister of Mines brought in the "Mineral Survey and Development Act," which was passed on May 19th, 1917, and under the provisions of which the Province was divided into six Mineral Districts, to each of which there was appointed a Resident Mining Engineer with headquarters at a centrally located point in such district.

In the district to which he was appointed the Resident Engineer is expected to devote his whole time to the performance of the duties of his office, and to carry on continuously a mineral survey of his district, keeping records of the same and of the mining and mineral developments taking place, and at the same time to assist prospectors and others with such advice as may be necessary and may come within the scope of a mining engineer's work.

Aside from special reports which may be called for by the Minister, the Resident Mining Engineers are expected annually to make a comprehensive report covering all matters relating to mining, mine development, and prospecting that have occurred within the year in their respective districts.

These annual reports of the Resident Mining Engineers follow, and form the basis of the information given in respect to the mineral industry and its development within the Province.

The following are the six Mineral Districts into which the Province is divided, with the Mining Divisions included in each and the location of the permanent office of the district, with the name of the Resident Mining Engineer appointed to each district:—

The North-western Mineral Survey District (No. 1) shall consist of that portion of the Province contained within the following Mining Divisions, that is to say: Atlin, Stikine, Liard, Skeena, Nass River, Portland Canal, Bella Coola, and Queen Charlotte; and shall have its permanent survey station and office at the City of Prince Rupert. Resident Mining Engineer, Geo. A. Clothier.

The North-eastern Mineral Survey District (No. 2) shall consist of that portion of the Province contained within the following Mining Divisions, that is to say: Omineca, Peace River, Cariboo, and Quesnel; and shall have its permanent survey station and office at Hazelton. Resident Mining Engineer, Douglas Lay.

The Central Mineral Survey District (No. 3) shall consist of that portion of the Province contained within the following Mining Divisions, that is to say: Clinton, Lillooet, Kamloops, Ashcroft, Nicola, Vernon, and Yale; and shall have its permanent survey station and office at the City of Kamloops. Resident Mining Engineer, H. G. Nichols.

The Southern Mineral Survey District (No. 4) shall consist of that portion of the Province contained within the following Mining Divisions, that is to say: Similkameen, Greenwood, Grand Forks, and Osoyoos; and shall have its permanent survey station and office at the City of Grand Forks. Resident Mining Engineer, Philip B. Freeland.

The Eastern Mineral Survey District (No. 5) shall consist of that portion of the Province contained within the following Mining Divisions, that is to say: Golden, Windermere, Fort Steele, Ainsworth, Slocan, Slocan City, Trout Lake, Nelson, Arrow Lake, Revelstoke, Lardeau, and Trail Creek; and shall have its permanent survey station and office at the City of Revelstoke. Resident Mining Engineer, A. G. Langley.

The Western Mineral Survey District (No. 6) shall consist of that portion of the Province contained within the following Mining Divisions, that is to say: Nanaimo, Alberni, Clayoquot, Quatsino, Victoria, Vancouver, and New Westminster; and shall have its permanent survey station and office at the City of Nanaimo. Resident Mining Engineer, W. M. Brewer.

The attention of those engaged in mining is drawn to the following sections of the "Mineral Survey and Development Act":—

Provisions in Aid of Prospectors and Miners.

Sec. 10. Each Resident Engineer shall, so far as practicable, in and throughout his mineral survey district assist miners and prospectors in the manner following, that is to say:—

(*a.*) By giving information as to mineral indications and as to ground open for location as mineral claims or placer mines as a result of knowledge gained during the carrying-out of the mineral survey of his district:

(*b.*) By examining samples and applying such tests as may be possible on the ground or in his office and advising as to the nature of any mineral and as to the best available methods of analysis, sampling, assays, and test:

(*c.*) By forwarding samples to the Minister of Mines for further examination and tests whenever in his opinion such course is necessary or expedient:

(*d.*) By reporting to the Minister of Mines the location and approximate cost of such roads, trails, and bridges as in his opinion are reasonably necessary in order to render possible the development of any mineral resources; and

(*e.*) Generally, by giving such advice, information, and directions as may be of assistance to miners and prospectors within his district.

PROVISIONS FOR THE PROTECTION OF INVESTORS.

Sec. 16. Each Resident Engineer shall, upon receiving notice of any advertised or solicited sale of shares in any company or in any claim or mine or mineral property whatsoever, upon statements or terms not in accordance with actual facts and conditions, notify the Minister of Mines, who upon investigation may, if found necessary, give such notices, either personal or public, as may be necessary to prevent any injury to investors; and every notice given under this section by the Minister of Mines shall be absolutely privileged.

Sec. 17. (1.) Where a corporation, other than a private company under the "Companies Act," acquires an interest in, or title to, or engages in work on any mining property situate in a mineral survey district, it shall forthwith notify the Resident Engineer of that district, and file with him full particulars thereof, and shall also file with him, as soon as it is issued, a copy of every prospectus or statement in lieu of prospectus which is required by the "Companies Act" to be filed with the Registrar of Companies.

(2.) If a corporation makes default in complying with any requirement of this section, it shall be liable, on summary conviction, to a fine not exceeding twenty-five dollars for every day during which the default continues, and every director and every manager of the corporation who knowingly and wilfully authorizes or permits the default shall be liable to the like penalty.

NORTH-WESTERN MINERAL SURVEY DISTRICT (No. 1).

By George A. Clothier, Resident Mining Engineer.

INTRODUCTORY.

The North-western Mineral Survey District (No. 1) is comprised of eight Mining Divisions, as follows: Queen Charlotte, Bella Coola, Skeena, Nass River, Portland Canal, Stikine, Atlin, and Liard, aggregating approximately one-third of the total area of the Province. Its length, north and south, is about 700 miles, of which the northern portion, of about 400 miles, lies east of and behind the Alaskan panhandle and consequently, as yet, only accessible through Alaska. The southern portion, of about 300 miles, includes the Queen Charlotte group of islands, Coast islands, and eastwards to the summit of the Coast range, averaging from 60 miles to 90 miles from the Coast, and offers every possible advantage for prospecting and operating.

The general geological conditions are simple, dividing the district lengthwise into three great parallel mineralized zones or belts, striking north-west and south-east, extending the full length of the Province. For the purposes of this report I have termed the Coast range of granodiorite the "Central Belt" and flanking it on either side the "Eastern Contact Belt" and "Western Contact Belt" respectively.

Each belt has its characteristic minerals; thus, the Central Belt might be called the copper-belt, containing, as it does, such copper-deposits as the *Outsider*, on Portland canal; the *Hidden Creek* and *Bonanza* mines of the Granby Company at Anyox; and the *Marble Bay* and *Britannia* mines farther south. The Western Contact Belt produces mainly copper, but also contains many small gold-quartz veins such as found on Vancouver and Queen Charlotte islands and the outer islands along the Alaska coast. The Eastern Contact Belt is characterized by deposits of gold, silver, lead, and zinc ores, and their combinations, as exemplified in the *Engineer* mine and Atlin Silver Lead Mines, Limited, at Atlin; the *Premier*, *B.C. Silver*, *Big Missouri*, *Dunwell*, *Porter-Idaho*, *Independence*, and others in the Portland Canal district; the *Dolly Varden*, *Toric*, *La Rose*, and others in the Alice Arm district; the showings in the Kitsumgallum Lake section; and the deposits of the Ootsa and Whitesail Lakes area.

The Central Belt has, as yet, been the greatest value producer from its immense low-grade copper-deposits, due largely to its accessibility, but as transportation facilities are provided the Eastern Contact Belt gives every indication of developing into the greatest mineral-producing zone in the Province.

Each mineral-belt, and especially the flanking belts, presents complicated geological features, which are being more thoroughly investigated each year by the Geological Survey of Canada and others, so that now there are available authentic reports and maps of the more important areas.

The following list is given to enable the reader to procure such publications pertaining to this district: "The Unuk River Mining Region," by F. E. Wright, Summary Report, 1905, U.S. Geological Survey; Bulletin 347, U.S. Geological Survey; "The Atlin District," by D. D. Cairnes, Memoir No. 37; "The Portland Canal District," by R. G. McConnell, Memoir 32; "Geology of Graham Island," by J. D. MacKenzie, Memoir 88; "Salmon River District," by J. J. O'Neill, Summary Report, 1918; "Salmon River District," by S. J. Schofield and Geo. Hanson, Summary Report, Part A, 1920; "Eutsuk Lake District," by R. W. Brock, Summary Report, Part A, 1921; "Upper Kitsault Valley," Alice Arm, by Geo. Hanson, Summary Report, Part A, 1921; "Coast and Islands of British Columbia, between Burke and Douglas Channels," by V. Dolmage, Summary Report, Part A, 1921; "Geology and Ore Deposits of the Salmon River District, British Columbia," by S. J. Schofield and Geo. Hanson, Memoir 132; "Coast and Islands of British Columbia, between Douglas Channel and the Alaskan Boundary," by V. Dolmage, Summary Report, Part A, 1922; "Reconnaissance between Kitsault River and Skeena River, B.C.," by Geo. Hanson, Summary Report, Part A, 1922; "Reconnaissance between the Skeena River and Stewart, B.C.," by Geo. Hanson, Summary Report, Part A, 1923; "Prince Rupert to Burns Lake, B.C.," by Geo. Hanson, Summary Report, Part A, 1924; "Whitesail-Tahtsa Lakes Area, B.C.," by J. R. Marshall, Summary Report, Part A, 1924.

Note.—The above, except the first two, are Geological Survey of Canada reports, procurable from the Department of Mines, Ottawa, Canada, or from the Western office of the Survey, 509 Winch Building, Vancouver, B.C.

ROADS AND TRAILS.

The progress in mining is largely dependent upon the amount of trail and road construction; in fact, it is about as essential as prospecting and development work. Its great importance as a branch of mining is recognized by the Mines Department, and consequently much attention is given to the requirements of the prospector and operator in this respect. The "Mines Development Act" is without doubt fulfilling its intent. An appreciable increase in this work has been accomplished this year throughout the district.

In the Atlin country assistance was granted the Atlin Silver Lead Mines toward the construction of a new road, and a grant was also made for a winter trail from Engineer to Atlin for mail and emergency use.

In the Stikine and Liard sections the work of relocating and improving the old Telegraph Creek–Dease Lake pack-trail into a truck road was continued and good progress made. Of the total distance of 75 miles, about 55 miles are in serviceable condition for motor-truck and tractor haulage. The balance of 20 miles, on the Dease Lake end, is in fair condition in dry weather, but otherwise practically impassable for trucks. It is expected this will be completed next year, enabling trucks to make the trip to the lake in from six to eight hours, and reducing freight rates to such an extent that the interior country will have a chance for developing and operating.

In the Portland Canal district much work has been done; the *Dunwell* wagon-road was completed to the mine and its extension as a trail continued almost to the Emperor Mines property; the trail on the south side of Glacier creek was improved and bridges reconditioned; the Marmot River wagon-road was graded to the forks from tide-water; assistance was given the Dalhousie Mining Company towards construction of a trail to the property; a trail built up East Cascade creek to Long lake; the upper end of the *Big Missouri* trail was corduroyed; assistance was given toward the continuation of the *Premier* road through to the Bush Mines; the trail up the South fork of Marmot was continued from the upper side of the glacier to Magee pass; a reconnaissance was made for a trail from Meziadin lake north to the Dominion telegraph-line, and numerous other trail repairs.

In the Alice Arm country the Dolly Varden Railway was put in repair in the early spring; assistance was granted for the *La Rose*, *Blue Bell*, *Lone Maid*, *Copper Cliff*, *Homeguard*, West Creek, and *Silver Bow* trails, and for a trail up Roundy creek to the *Keystone* property.

Small grants were also made for a trail on Porcher island and a trail from Lockeport, Q.C.I., to the *Apex* property, also for a trail up Little Beaver river at Kitsumgallum lake and a short trail on Thornhill mountain, opposite Terrace.

About 20 miles of foot-trail were built from Kimsquit at the mouth of the Dean river toward Tesla mountain (via Sakumtha river), where some mineral-showings have been found.

PROSPECTING.

The reader is referred to last year's report, 1925, under the heading of "Prospecting," for a description of the more favourable and accessible sections of this district for prospecting and how to reach them.

A set of aeroplane pictures of a strip of country 10 miles wide, east from the summit of the Coast range, and from Stewart north to the Stikine river, a distance of about 150 miles, would be of inestimable value for distribution to prospectors, selection of trail routes, etc.

Prospecting has been keen throughout the district this year and approximately 800 claims have been recorded. This number must not be considered as new locations, as there are many relocations of claims in lieu of assessment-work.

Probably the record for speedy prospecting is that of the *Prosperity* group on Marmot river. Some of the claims were staked late in 1925 and two or three of them this year. This season about $8,000 worth of ore was shipped by the owners and this fall a 52-per-cent. interest was bonded for $125,000, with a cash payment of $20,000.

DEVELOPMENT.

This has probably been the most substantial year's development ever done in this district. There were fifty-five companies under active operation during the year, of which about twenty are working through the winter. In addition to this, work in excess of assesment was done on about fifty groups of claims. Government office statistics show that assessment-work was done on 1,850 claims and groups of claims.

About ten Provincial companies have been incorporated in the Province this year, and, in addition, several foreign companies which are directly interested in this district were registered.

Several companies have been inactive this year, due to lack of capital, which was to be expected after the epidemic of incorporations of the past two years and the resultant undermining of the confidence of the public. Many companies raised and wasted a few thousand dollars each on holdings of doubtful or no merit, which, if concentrated on deserving properties, might have produced better results.

In the northern portion of the district there has been a vast improvement in the mining outlook in the past two years. The development of the famous *Engineer* mine has progressed all year and shipments made. The Atlin Silver Lead Mines, Limited, has also been under development all season. The *Gleaner* and *Kirkland* properties, adjoining the *Engineer*, have had considerable exploratory work. The hydraulicking plant on the Pine Creek property of the Discovery Mining and Power Company has moved an immense yardage of gravel this season in working up-stream to bed-rock. Little or no production was anticipated at this stage of operations.

Prospecting is reported from the Taku Arm and Taku River section.

The Dease Lake country has all the earmarks of becoming a very important mining section of the Province. Since the wagon-road from Telegraph Creek to Dease lake has been assured, and a portion completed each year, the progress of the interior has been remarkable for such an outlying district. This year there are six hydraulicking outfits being installed, two drag-line scraper outfits being tried out, and two drilling outfits working, besides some placer-mining and a lot of prospecting. This is a good country for any one to stay with from now on.

In the Portland Canal section the results of development-work are beginning to show. Up Salmon river the B.C. Silver Company's mine has reached the shipping stage and has an assured future. The *Big Missouri* has outgrown the boom stage and is getting some extensive exploration. The *Silver Tip*, north of it, is improving with development and looks like a very promising property. The Outland-Silver Bar Mines on the west side of Salmon glacier has exposed a very interesting body of ore on the surface. It has the appearance of a big body and assays very satisfactorily.

The Sebakwe and District Mines, Limited, has driven over 1,000 feet of tunnel with the object of crosscutting the northern extension of the B.C. Silver-Premier ore-zone. The possibilities justify the work and the outcome may have far-reaching results. The *Premier* has been doing extensive development on the lower levels.

On Marmot river the *Porter-Idaho* is the principal property. A very considerable amount of development was done last winter, but during the summer season all attention was given to getting out shipping-ore.

The holders of the ground above the *Porter-Idaho* had ore thrust upon them by the continuation of one of the *Porter-Idaho* veins, from which the owners shipped this fall. The Marmot Metals is developing some interesting bodies of zinc in limestone. The Government road was completed to the forks from tide-water.

On the Bear river the main activity is at the *Dunwell*. The mill is about completed and the mine has been prepared for stoping ore. The *Independence* has been bonded under a working agreement and development-work resumed for the winter. The *Albany* on Glacier creek has acquired some necessary adjoining ground and will be worked all winter. The *Victoria*, *George Copper*, *Terminus*, *L. & L.*, *Dalhousie*, and others were being worked during the year. Considerable work has been done and is being continued by the North Country Mining Company on its property at the head of Bulldog creek.

The *Outsider* at Maple bay, on Portlanad canal; the *Golskeish* at Sylvester bay, just below Anyox; the *Bonanza* group; and the *Hidden Creek* mines are under operation by the Granby Company. Some work was done on the *Saddle* claim at the head of Hastings arm.

In the Alice Arm section the *Toric* continues to be the feature. A little development and the construction of a 50-ton mill has been the season's work. The Alice Arm-La Rose has been developing and getting out some shipping-ore during this season. The Kitsault River Mining and Development Company has done a little work on its holdings above the Kitsault glacier. The Keystone Mining Company on Roundy creek has done considerable satisfactory development-work. The Kitsault-Eagle Silver Mines has been working on three properties this year.

A good indication for this section is the bonding of four groups in the copper-belt on the west side of the Kitsault river by Vancouver interests, on which contract-work is being done this fall.

There are several very attractive properties in this section and it looks as if the camp is due for a mining revival on its merits.

In the Kitsumgallum (Kalum) Lake section D. W. Davis and associates have been active on Beaver and Cedar rivers and on the *Bear* group on Maroon mountain. A considerable amount of development has also been done by individuals. The Northern Mining and Development Company opened up the *Golden Nib* claim on Thornhill mountain and shipped a car-load of ore to Trail. The same company was developing the *Beaver* group in that vicinity, but both properties are closed down for the winter.

On the Coast there is a surprising amount of prospecting and development being done in a small way.

On Porcher island the *Trixie* (Patterson) has shipped about 82 tons of ore this summer. The Wright claims adjoining are being developed by the owner. The Rowe claims on Pitt island have had two or three men working on them all summer. The *Cordila* group on Princess Royal island is again under development.

The *Pink Rose* group on Klekane inlet and the *Western Copper* group up the river from the head of Khutze inlet have had a little work done on them this year. The latter had considerable development ten years ago, but has been inactive since. (*See* Report.)

PRODUCTION.

The following is a list of the shipping properties in No. 1 District and their outputs for the year 1926:—

Name.	Ore mined.	Gold.	Silver.	Copper.	Lead.	Zinc.
Atlin Mining Division—	Tons.	Oz.	Oz.	Lb.	Lb.	Lb.
Cherokee	162	25	21,551	.....	46,648	.....
Engineer	9,204	7,732	5,032	.....	.....	.....
Portland Canal Mining Division—						
B.C. Silver	962	1,835	76,567	.....	.....	.....
Dunwell	200	121	4,633	.....	61,419	42,503
L. & L. Glacier	57	5	8,598	.....	14,400	.....
Outland	2	.....	51	.....	747	.....
Outsider	34,729	.....	.....	1,036,113	.....	.....
Porter-Idaho	174	16	70,090	.....	108,403	.....
Premier	230,987	122,228	2,920,492	.....	443,088	.....
Prosperity	29	2	12,072	.....	15,004	.....
Nass River Mining Division—						
Esperanza	54	10	5,735	.....	528	.....
Golskeish	6,212	570	3,418	.....	.....	.....
Hidden Creek	1,211,619	7,316	393,206	38,686,513	.....	.....
La Rose	42	10	7,111	.....	2,348	.....
Skeena Mining Division—						
Belmont	26,650	10,854	6,604	94,940	.....	.....
Drumlummon	7	4	188	8,907	.....	.....
Golden Nib	30	48	42	665	.....	.....
Trixie	82	222	93	.....	.....	.....
Totals	1,521,202	150,998	3,535,483	39,827,138	692,585	42,503

Compared with the production in 1925, there was a decline in the output of gold, but a substantial increase in the production of silver.

Quantity production is considerably in excess of 1925 and, notwithstanding the depression in the price of silver, the value of the total production was over $10,900,000.

Tonnage.—This is 103,359 tons over last year and is the first year that it has reached the 1,500,000-ton mark. This is due to the record tonnages of both the Granby and Premier Companies, more than offsetting the loss through closing-down of the Belmont-Surf Inlet Mines. The shipments of the smaller producers have increased over 1,500 tons. A forecast for next year from a tonnage standpoint is particularly encouraging. The Granby Company with its increased milling capacity will doubtless increase the mine tonnage. *Premier* has been mining about 20,000 tons a month for the past few months, which, if maintained, and there is every probability that it will be, will also swell the 1927 tonnage. The B.C. Silver is developing ore right along, giving every reason to expect a substantial increase in shipments next year. The *Dunwell*, with

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SALMON and BEAR RIVER

SECTIONS

PORTLAND CANAL M.D.

0 1 2 3 4 miles

To accompany Report of.
G.A.Clothier, Resident Engineer.
1926

SUMMIT LAKE
Daisy
Troy
Divide
DIVIDE LAKE
DILWORTH GLACIER
Hollywood
49 cabin
Yellowstone
Overland
Eldorado
Brown
Hercules
Montana
Sunset
Silver Tip
Silver Crest
B.C. Bonanza
Unicorn
LONG LAKE
White Heather
Mineral Hill
Monitor
SILVER LAKE
Daly & Sullivan
SLATE MT.
Chief Merrill
No Name lake
Big Missouri
Mother-lode
Pay Roll
Boundary
Mineral Basin
Indian
Glacier
cabin
INDIAN LAKE
Alaska Canadian Premier Extd.
Wood-bine
Cobalt
Extenuate
Bush Mines Ltd.
Mist
Northern Light
B.C. Silver Mines
Premier
Dalhousie
cabin
International
M.C.
New Alaska (President Silver M.)
ELEVEN-MILE (Road House)
NINE-MILE
Red Bluff
Premier Aerial Tram
Prince John
Bayview
Bridge
STEWART
Molly B
gold ore
Tidal Flats
HYDER
Silverado
Melvin
Porter-Idaho
Prosperity
Silver Bell
Aberdeen
Silver Slipper
MARMOT BAY
cabin
Wire Gold
Marmot
Big Mike
Portland Canal
Salmon River
Bear River
Kiapuro Glacier
Harris creek
Salmon River
Bear River Ridge
Mountain Boy
cabin
Anaconda
Vancouver
Terminus
Mt. JOHNSTONE
Morning Star
Portland
Ibex
Rufus
Comet
Argenta
Barite
Red Top
Vetron
Bear River
Collins cr.
Enterprise
Cabin and bridge
George
Grey Copper
Ruby Silver
Mosquito cr.
Red Cliff
Independence
cabin
Goose cr.
Mt. GLADSTONE
Unexplored
Bear River Glacier
Divide
Murdock
Montreal
Strohn cr.
MEZIADIN LAKE
Nelson cr.
porter cr.
Delnorte
Willoughby cr.
Watershed
St. Elmo
Jutland
cabin
Ore-Mountain
Radio
Stewart
Roosevelt
cabin
Americus Girl
Bitter cr.
Stewart Central
Tyee
Dandy
Victoria
Red Mines
Silver Ledge
Mayflower
Dunwell
Nabob
Goldie (Emperor)
Lakeview
North Star
Ruth Francis
cabin
Morning Star
Sunshine
cabin
Mimico
Phoenix
P.C. Mill
Black Bear
Portland Canal M.Co
cabin
Union
Silver
L.L.
Albany
Columbia
Evening Sun
Gibson
Kenneth
Mobile
Ben Bolt
Excelsior
Barnes Lake
Bear River Glacier
Glacier Creek
Bear River
Harrly
Old Chum
Windsor
Range
Cambria Valley
Unexplored
Brodley glacier
Portland River
Harner
Ficklin
Washington
North Fork Basin
Fraser
Crawford
Engineer
Patricia
Prince George
Big Mike
Portland Canal
Marmot River
Horsetail
Marmot Metals
Montana

Key Map

Scale of Miles
0 5 10 30
Grand Rapids
Iskut River (Tel cabin)
Scud
STIKINE MINING DIVISION
Stikine River
Echo Lake cabin
Nass River
Iskut
Boundary (Customs)
International
Wrangell
PORTLAND CANAL MINING DIVISION
Burroughs bay
Hyder
Stewart

B.C. Bureau of Mines

its mill in operation, will require 100 tons a day. The *Toric* should be milling 50 tons a day for the greater portion of the coming year. The *Porter-Idaho* output is expected to be more than doubled. The *Engineer* mine will very probably have a greater production and the Atlin Silver-Lead Mines, with improved transportation from the mine to the lake, promises substantial shipments. All told, the outlook is very optimistic.

Gold.—Due to the closing-down of the Belmont-Surf Inlet property there is a decrease of 11,919 oz. gold. Though both the *Premier* and Granby Company have increased their outputs and some 7,700 oz. was produced from the *Engineer* mines, it was not sufficient to offset this loss. The *Engineer*, however, may be expected to develop an important yield of gold.

Placer-gold output is practically the same as last year, with very good prospects for an increased yield for 1927.

Silver.—This metal, with an increase of nearly 750,000 oz., has more than made up for last year's falling-off. The *Premier's* increase of about 600,000 oz. is the chief factor. Granby's output is 15,296 oz. greater than last year. The B.C. Silver comes in with 76,567 oz. and the *Porter-Idaho* takes an important position with 70,000 oz. With the *Dunwell*, B.C. Silver, *Toric*, Atlin Silver-Lead, and *Porter-Idaho* all at the producing stage, the future for silver in this district is distinctly bright.

Copper.—The Granby Company's production of 39,722,626 lb. of copper, of which 1,036,113 lb. came from the *Outsider* group, is slightly higher than that of last year and a record for the company. The enlargement of the milling capacity assures the maintenance of this output under normal operating conditions.

There are three sections in this district of prospective importance as copper-producers—the Rainy Hollow section; the area at the head of Bear river containing the *George* copper property; and the "copper-belt" on the west side of the Kitsault river, in the Alice Arm country.

Lead.—The output of about 700,000 lb. this year is indicative of the possibilities for this metal. It is widely distributed throughout the district, but is not a principal metal and will therefore assume importance only when a number of shipping properties are developed.

Zinc.—This, like lead, is well distributed, but there are areas with very attractive showings of straight zinc.

The district holds the position of producing approximately 75 per cent. of the lode gold, 33 per cent. of the silver, and 44 per cent. of the copper of the whole Province.

REVIEW BY MINING DIVISIONS.

The district will be reviewed under the main headings of the Mining Divisions, subdivided into sections as follows:—

Queen Charlotte Mining Division—Graham Island section; Moresby Island section.
Bella Coola Mining Division.
Skeena Mining Division—Coast section; Canadian National Railway section; Kitsumgallum Valley section; Lakelse Valley section.
Nass River Mining Division—Observatory Inlet section; Hastings Arm section; Alice Arm (proper) section; Kitsault River section; Illiance River section.
Portland Canal Mining Division—Portland Canal (proper) section; Georgia River section; Marmot River section; Bear River section; Meziadin Lake section; Salmon River section; Unuk River section.
Stikine Mining Division—Stikine River section; Iskut River section.
Liard Mining Division—Dease Lake section.
Atlin Mining Division—Taku Inlet section; Rainy Hollow section; Tagish Lake section; Atlin Lake section.

QUEEN CHARLOTTE MINING DIVISION.

Several properties have been examined by engineers this season, but there has been little activity, other than performing the necessary assessments and some prospecting.

Graham Island Section.

Black Sands. (*See* Report of 1925.) Nothing further has been done following the experimental work of the past two years by C. Cabrera. Laboratory tests show that a recovery of about 81 per cent. of the gold can be made by amalgamation and

cyanidation. Operating tests were made on the ground, but the information gained seems to have been inconclusive. The gold is in the black sands, but all black sands here do not carry gold and the values are therefore erratic, the sands assaying from *nil* to $9.43 a ton. Obviously, exhaustive and systematic sampling should be done before any plant is contemplated. The syndicate making the tests has taken sixty-one samples covering a staked area of 7,500 by 500 feet, or 3,750,000 square feet, or one test-hole and sample for each 61,480 square feet. Test-holes at intervals of 50 feet, or one for each 2,500 square feet, would be safer and would give 1,500 samples in place of sixty-one. I think that the erection of a plant before the ground is thoroughly sampled would be a very speculative undertaking.

South Easter. This originally consisted of three Crown-granted claims, owned by J. McLellan, of Queen Charlotte City, and J. J. Gordon, of Skidegate. Four claims were later added to the group, but I understand that the *South Easter* and *Beaconsfield* now constitute the group. The claims are situated about a mile from the Indian village of Skidegate, from which there is a fair wagon-road.

The general rock formation is diabasic, in which occur three quartz-filled fissures. The important one of these has been traced on the surface for 1,000 feet or more, averages in width about 8 feet, and carries gold values. In 1918 a considerable amount of development was done by Eastern parties. A small compressor was installed and a good camp erected. A shaft was sunk 100 feet on the vein and two drift-levels driven from it, one at 50 feet depth and the other at the bottom. At the 50-foot level drifts were run 50 feet to the west and 75 feet to the east, the latter showing good ore. On the 100-foot level 100 feet was drifted west and 250 feet east. The vein-filling on this level is soft and badly shattered, carrying little values.

A raise was put up from the east drift to tap the ore showing in the east drift on the 50-foot level, and demonstrated that the ore-body extended about 15 feet below the level, or 65 feet from the surface, and is about 5 feet in width. Work was stopped at this stage and no underground work has been done since. The owners have been doing some surface work each year.

Skidegate. This claim is situated on the Indian reserve at Skidegate and adjoining the *South Easter* group of claims (*see* report) at about 2½ miles from the wharf at Skidegate Indian village. The claim is owned by A. J. Gordon, of Skidegate. Very little surface work has been done, because of the heavy glacial wash, but a shaft has been sunk 22 feet. It was started in the vein near the foot-wall and consequently left the vein part way down, as the vein dipped opposite to expectations. There is said to be a mineralization on the surface 15 feet in width. It consists of iron pyrites, some galena, and a little chalcopyrite and zinc-blende in a quartz gangue. The values are mainly in gold; a sample across 30 inches on the foot is stated to have assayed $62 a ton and very high assays have been obtained from specimens.

The property is well situated and has sufficient mineralization and values to make it worth while investigating.

Moresby Island Section.

Blue Mule. This group consists of three claims—*Blue Mule*, *Paystreak Nos. 1* and *2*—owned by McRae & Wiggs, of Queen Charlotte City, and situated on the west coast on the South arm of Kootenay harbour. It is about 30 miles south of the western entrance to Skidegate inlet and takes a day to get from Queen Charlotte City, where a boat can be procured for the trip. There is a good cabin at the beach and the veins and showings are about half a mile from tide-water.

The general rock formation is volcanic, in which are belts of bluish limestone. There are three veins on the property, filled with a breccia of quartz and country-rock, grading from a quartz-stringered country-rock to straight quartz. The quartz is more or less pyritized and the values are in gold, partly as free gold in both the quartz and pyrite and partly combined with the pyrite.

The upper vein is the strongest and has had the most work done on it, tracing it for nearly 1,000 feet and showing its width to vary from 1 to 4 feet. The vein has been stripped and open-cut in numerous places, many of which show free gold.

A Ross mill was installed under difficult conditions, but no satisfaction was attained with it. An attempt was made to mine a little ore from a surface cut and mill it, but this proved unsuccessful. I think that with an efficient small mill of some kind enough "pay" could be taken from the surface to further develop the property.

Star. There are six claims in this group, situated about 2 miles from Lockeport—namely, *Star*, *Roy*, *Rand*, *Imperial*, *Nellie L.*, and another, of which I have not the name. This is the old *Apex* group and is now owned by R. Morrison, Rand McDonald, and W. H. Watson, of Lockeport. A considerable amount of work had been done on the claims some years ago. There is a 300-foot tunnel on the *Star* claim and a 100-foot tunnel on the *Nellie L.* claim. I have not examined the property, but some fine chalcopyrite samples are shown by the owners. I judge the predominating mineral is magnetite, carrying some copper values with bunches of chalcopyrite in places. Some work was done by the owners this year in repairing the trail from the beach and also on the showings.

Swede. This group of eight claims is owned by Rogers, Pearson & Larsen, of Lockeport, and is situated just to the left of the entrance to Lockeport harbour. It is an old group of claims and considerable work has been done from time to time on it. The mineral-showing consists of an immense body of low-grade copper ore, consisting of chalcopyrite and bornite disseminated and in small veinlets and bunches throughout a diabase country-rock. Considerable stripping, open-cutting, and two tunnels constitute the work done. One tunnel is 170 feet long and the other 80 feet, both showing disseminated chalcopyrite and in the latter some disseminated bornite. With the bornite is associated a small amount of platinum and a trace of palladium, a sample assaying 20 cents in gold, 3.1 per cent. copper, 0.01 oz. platinum, and 1 oz. silver to the ton.

The property is ideally located on tide-water for working on any scale.

Copper Island. This island lies just outside of Jedway harbour. Several years ago A. Heino staked three claims, covering the island, and each season took out a few tons of good chalcopyrite ore, which he took to Tacoma in his own boat. The ore-zone or vein is a hornblende-belt 20 to 30 feet wide, extending the length of the island or about 1,400 feet. On the north end of the island a tunnel 150 feet long has been driven in a limestone-belt lying apparently on the foot-wall of the hornblende. There is considerable chalcopyrite scattered through the limestone as well as small bunches. From a point above the collar of the tunnel the hornblende-belt has been exposed at intervals by stripping and open-cutting to the south end of the island, showing, wherever broken into, disseminated bunches of chalcopyrite. A maximum depth on the ore of about 200 feet could be obtained without sinking.

A large body of low-grade ore is indicated by the showings. Diamond-drilling is obviously the proper way to prospect it.

Hope. Two claims—*Hope* and *Hope Fraction*—staked by Hugh McEachern, comprise the group. The claims lie about a mile from the head of Houston inlet. At about 200 feet elevation open-cutting has exposed a vein about 20 feet wide, composed of magnetite and limonite, with which are associated pyrite, pyrrhotite, and chalcopyrite. Across 10 feet, in one face, it assays 2.7 per cent. copper, with traces of gold and silver. Recent assessment-work has opened up a face of ore 6 feet wide, assaying 3.5 per cent. copper. Business information regarding the property may be obtained from W. Wilde, Jedway.

Copper Queen. J. S. McMillan is the owner of this group, situated just above Jedway harbour. I. Thompson, of Jedway, has been looking after the property and keeping up the assessments for a number of years. The first work done disclosed a 6-foot vein of magnetite, pyrite, and chalcopyrite on the surface. In 1908 a crosscut tunnel was driven 220 feet toward cutting the vein exposed on the surface, but failed in its objective. More recent assessments have opened a large body of low-grade disseminated chalcopyrite, which might meet the requirements of one of the larger companies.

Thunder. This group is situated on Collison bay, a few miles south of Jedway, and is owned by Ike Thompson, of Jedway. Three Crown-granted claims—*Thunder*, *Sadie*, and *Spade Flush*—constitute the group. The vein has been exposed on the surface at several points, but apparently is cut by numerous dykes, which do not appear to displace the vein in any way. The surface exposures show the vein to be from 6 to 10 feet in width, of practically solid magnetite, accompanied in places by chalcopyrite. An open-cut across the vein, directly over the tunnel, gave an average sample assaying 2 per cent. copper, 0.7 oz. silver, and $1 gold to the ton. Another open-cut 200 feet south assayed, across 6 feet, 1.5 per cent. copper, 0.8 oz. silver, and $1.20 gold to the ton.

About 200 feet vertically below the croppings a crosscut tunnel at 650 feet elevation was driven 273 feet, cutting the vein, and continued a further 60 feet. The vein shows in place on

the right-hand side of the tunnel and is indicated by small bunches of ore on the left or north side. A north drift was run 34 feet, but was apparently in a cross-dyke all the way. This was later continued, turning more to the west, and therefore in the hanging-wall from the ore-body showing on the surface at this point. A north drift of 34 feet was in ore, but, coming up against a dyke, was turned west on a small streak of ore evidently lying along the wall of the dyke. A survey of the surface showings and underground workings would likely clear up any difficulties in following the ore underground. A sample taken across 6½ feet at a point 30 feet on the north drift gave 2.6 per cent. copper, 3 oz. silver, and 80 cents gold to the ton.

Meal Ticket.

There are three claims in the group—*Meal Ticket*, *Treasure Vault*, and *Treasure Box*—which is owned by Geo. D. Scott, of Vancouver. The showings are about 3,500 feet from the beach and south of and adjoining the *Thunder* group. The country-rock is igneous. The showing is an 8-foot vein of magnetite and quartz, carrying considerable pyrrhotite and some pyrite and chalcopyrite. Stripping and open-cutting have exposed a portion of the vein about 200 feet in length, striking north and south, showing some shipping-grade chalcopyrite. This is a very favourable showing and well worth opening up. Probably another 150 feet depth could be obtained on the vein by crosscutting from the creek-level. A crosscut tunnel at the south end of the 200-foot exposed section of the vein shows the vein to be about 8 feet wide, carrying a good grade of copper ore. A small compresssor is necessary for development as the rock is so hard and tough that hand-work would be slow. There is a good chance for diamond-drilling from the creek-side, which is probably 150 feet lower than the outcrop.

Several ore-deposits of this type occur on Moresby island—namely, magnetite carrying small percentages of iron and copper sulphides—which will probably become profitable if the magnetite is ever utilized for the production of iron.

BELLA COOLA MINING DIVISION.

There has been a little prospecting done in this Division this year, resulting in about thirty claims being recorded.

On the reports of prospectors who have been in the Tesla Mountain section for several seasons, and judging from the ore samples brought out, recommendation was made to the Mines Department for a trail from tide-water to that section, an estimated distance of 35 miles. The sum of $3,000 was granted for this work, with which a trail was started from Kimsquit cannery at the mouth of the Dean river and built for 17 miles. From this point a foot-trail was blazed and slashed out the balance of the distance. Douglas Lay, Resident Engineer, District No. 2, in which district the section lies, made an inspection trip and on his report will depend the completion of the trail.

A number of claims were staked on the Smitley river, about 7 miles up from South Bentinck arm, by P. Jacobson, who reports silver-lead showings. A specimen of ore sent in assayed $2.40 in gold, 26 oz. in silver to the ton, 3 per cent. copper, 12 per cent. lead, and 10 per cent. zinc. It is understood that some work is being done on the showings this winter.

SKEENA MINING DIVISION.

I think that during the past two years there has been a noticeable improvement in mining along the Coast and Coast islands. Certainly there are more assessments and general development-work than for several past years. Examinations by engineers have been made of several properties this season. The revival of interest in the old *Western Copper* group up from the head of Khutze inlet is a favourable omen. Development-work at the head of Klekane inlet, at Rivers bight, and on Pitt, Gibson, and Porcher islands is encouraging. The Kitsumgallum Lake and Terrace sections are making progress slowly but surely.

The one regrettable feature is the depletion of the property of the Belmont-Surf Inlet Mines, Limited, and the dismantling of the plant.

Coast Section.

Belmont-Surf Inlet Mines, Ltd.

(*See* previous Annual Reports.) This company has been operating since 1916, but depleted the ore-bodies in June of 1926, closed down and dismantled the plant. During 1926 26,650 tons of ore was mined and milled, yielding $276,453. The property has produced a total of 836,500 tons of ore, yielding

nearly $8,000,000, of which $1,437,500 has been paid in dividends, as follows: Up to and including 1924, $687,500; 1925, $312,500; 1926, $437,500; total, $1,437,500.

Western Copper. This group, which is owned by the Revenue Mining Company, Limited, includes forty-seven Crown-granted mineral claims, extending from tide-water at the head of Khutze inlet. The mineral-showings are about 5 miles up the Khutze River valley. The property is owned by Martin, Shannon & Mathers, of Vancouver. In the spring of 1925 it was bonded by E. W. Scully, who turned over his bond to the Khutse River Mining Company. This company was unable to handle it and I presume it reverted to the owners again, and was taken over in the spring of 1926 by the Revenue Mining Company, Limited. This company was incorporated on May 6th, 1926, with its registered office at 707-8 North Western Building, 509 Richards Street, Vancouver. It is capitalized for $500,000, divided into 500,000 shares at $1 par a share.

Prior to 1910 the property had been considerably developed. A standard-gauge light railway was built from tide-water to about 2½ miles up the valley. A camp was built at the foot of the hill below the vein-outcroppings. From this "lower camp" there is a trail up to the old camp at the eastern end of the vein-exposures. This trail consists, in places, of ladders and ropes and the climb is no pleasure-trip on a rainy day. The vein-croppings are at an elevation of about 2,000 feet, or 1,700 feet above the valley. From the old cabin, or its site, there is a trail west along the steep side-hill, following the vein all the way through to the *North Star* canyon, the west side of which is inaccessible. The extension of the vein westerly from the *North Star* canyon is reached by another trail from the lower camp. I did not go over this portion of the vein, as I understand the eastern portion has the better showings.

From the old camp-site the vein is exposed and followed by the trail for approximately half a mile to the *North Star* canyon, affording every opportunity for examination. The country-rock is granodiorite of the main Coast range. The vein is a fissure mainly filled with quartz and feldspar, mineralized with pyrite, but showing in places chalcopyrite and, in one small lens, chalcocite.

The vein strikes about N. 35° E. (mag.), paralleling the valley, and dips at from 26° to 32° south into the hill. Depth on the vein would therefore have to be obtained by sinking or cross-cutting to it.

The only reasonable place from which to start a tunnel would be at the most advantageous point along the top of the talus-slopes at the foot of the bluffs. This would be several hundred feet below the vein-croppings and it would therefore require at least 2,500 feet of tunnel to reach the vein for deep development and ultimately for a working-tunnel.

The best ore-exposure is where the vein crosses the bottom of the *North Star* canyon at 1,850 feet elevation, which is the lowest point on this east section of the vein. I believe that a crosscut tunnel was driven about 50 feet vertically below the cropping at this point, encountering the vein at about 145 feet, but showing little mineralization. My information is that this tunnel was driven in the winter and was reached over the snow up the canyon. It is only accessible in summer by going down the bluff on a rope. I had no rope. At this point, on the surface, the vein has been stripped and blasted off for a length of about 60 feet, of which there is a 10-foot section on the west side of the creek. Beyond this the vein can be seen in the west wall of the canyon for several hundred feet, but is inaccessible and apparently small.

The vein is from 2 to 5 feet wide, the 2 feet being apparently the width of the main fissure, for where over 2 feet wide it is caused by slabs of granite from the hanging-wall lying in the vein quartz. The chief minerals throughout the vein are pyrite and chalcopyrite, but in this particular cut there is a narrow lens of chalcocite, about 15 feet long and up to 4 inches thick, lying in the centre of the vein. The remainder of the mineralization here consists of small seams and patches of pyrite and a little chalcopyrite. The total width of mineral would not exceed 10 inches anywhere.

A sample of the chalcocite gave assay returns of $63 gold to the ton, 8 oz. silver to the ton, and 47 per cent. copper, and a few pieces of more or less leached and oxidized chalcocite gave $74 gold to the ton, 1.5 oz. silver to the ton, and 12 per cent. copper.

A sample of a number of pieces of heavily pyritized quartz showing chalcopyrite gave the best values—$764 gold to the ton, 14.8 oz. silver to the ton, and 6.5 per cent copper.

Going east along the vein-cropping for about 300 feet to the old blacksmith-shop, the vein changes to a foot or two of barren sugary quartz for a distance and then pinches down to about

6 inches of pyritized quartz, in which occur short lenses of solid pyrite up to 4 to 5 inches thick. This mineralization occurs in portions of the vein over a length less than 100 feet, and, unless very high grade, the ore is unimportant other than indicating places favourable for exploration-work. A sample of this class of ore—that is, heavily pyritized quartz showing no chalcopyrite—gave assays of $88 gold to the ton, 2.6 oz. silver to the ton, and 1 per cent. copper.

About 200 feet farther east from the old blacksmith-shop a tunnel 20 feet long, on the vein, shows only bull-quartz and diorite. Thirty feet farther along an open-cut shows the vein to have separated into a number of small stringers of barren quartz. Farther east another 50 feet an incline shaft on the vein shows a few inches of quartz on the hanging-wall and stringers of quartz through the country-rock for a width of 4 to 5 feet with no mineralization of any kind.

Another open-cut across the vein 50 feet farther east exposes 4 feet in width of barren mixed quartz and country-rock, and on the foot-wall a few inches of pyrite, which is worth sinking on.

A few hundred feet east of this cut the vein is stripped along the trail for a section about 50 feet long, showing about 18 inches in width of reddish quartz, in which can be seen an occasional patch of chalcopyrite, especially where there has been some oxidation. Small streaks of pyrite occur on either the hanging or foot walls. The total mineralization is unimportant, but probably a favourable place for exploratory work by sinking or otherwise obtaining a little depth on the vein.

Several hundred feet farther east considerable work has been done in breaking out the vein along the side-hill for a length of 60 feet. This discloses the greatest width between walls so far noted. It is composed of an upper or hanging-wall vein of barren, honeycombed quartz, due to the weathering-out of the feldspar, about 4 feet wide; then 3 feet of mixed quartz and granite carrying no mineral; then 3 feet on the foot-wall of heavily stained quartz from a 4-inch seam of solid pyrite lying on the foot-wall. At the lower or east end of this cut a 27-foot tunnel, starting in the central, quartz-granite portion of the vein, was driven across the vein to the hanging-wall, exposing mixed quartz and granite for 23 feet and 3 feet of barren white quartz on the hanging-wall. The 4-inch seam of pyrite on the foot-wall in this cut is another location for further exploration.

From this point for over 1,000 feet to its eastern extremity at the old camp the vein is exposed on the surface and by numerous open-cuts and short tunnels, nowhere showing anything but white quartz without mineralization.

There is, therefore, east of the *North Star* canyon, a length of exposed vein of probably 2,000 feet, in which there are four short sections showing some mineralization, the most promising one being in the canyon. No amount of ore has been developed, nor are the surface showings indicative of anything likely to develop into a large tonnage production; yet the values found in the heavy sulphides certainly warrant further exploration and give the property considerable prospective merit.

I would expect comparatively small lenses of high-grade ore which might make the operation of the property a very profitable enterprise.

I would suggest further drifting on the vein from the crosscut tunnel under the canyon showing and sinking on the other ore-croppings. If results are satisfactory a deeper crosscut tunnel could then be driven to the vein for more extensive exploration.

The old tramway from the beach up the river-valley is pretty well rotted out and beyond redemption. A new route was surveyed this season, giving a good grade for 5 miles to a point under the ore-croppings. Ore could be delivered from a permanent working-tunnel to the railway by aerial or other tram.

Pink Rose. (Formerly *Bolton* group.) There are eight claims in the group—*Copper Cliff*, *New Crown*, *Bella*, *Key*, *Pink Rose*, *Last Chance*, *Last Chance No. 2*, and *Bonanza*—owned by A. McLeod (address Butedale, B.C.) and associates. The claims are situated about 2 miles up the hill on the north side of Klekane inlet, about 1 mile from the head. There is a cabin on the beach from which a good jumper-road has been built by the owners to the upper cabin at 1,750 feet elevation.

The ore-showing on which the greater work has been done is of contact-metamorphic type, along the contact of the Coast Range granite with a belt of limestone. The work done here consists of an open-cut and a crosscut tunnel to the vein, about 30 feet below. The open-cut shows a width of 12 to 15 feet, in which are lenses and bunches of crystalline limestone, and the alteration products epidote, hornblende, garnetite, etc., all more or less mineralized with

chalcocite and bornite. A width of about 2 feet contains some sortable ore. The contact, though very irregular, strikes approximately east-west.

The tunnel, at 2,200 feet elevation, has been driven on a bearing of N. 10° W., cutting the vein at 65 feet from the portal, and continued 35 feet on the vein, demonstrating similar conditions to the surface. Farther west another granite-limestone contact has been traced for several hundred feet, showing a little mineralization, but, being along the course of a creek, it is difficult to open it up to any extent.

East of the main showing and possibly its continuation another vein has been traced, following down a deep gulch. A few open-cuts were put in on the lower end of it in the creek-bed, showing fair mineralization in places. The owners intend doing some further work on this vein farther up the gulch, where the cropping is on the side and therefore away from the creek-water.

I think that the extension of the drift in the upper tunnel would be the best development, for above it is the best surface showing exposed so far on the property.

Cordila. This group is owned by Cordila & Koski, of Butedale, and is comprised of the following mineral claims: *Royal*, *Bight*, *Landslide*, *Mountain View*, *Counder*, and *Present*. The claims are situated about 2 miles up Rivers bight on an arm on the west side and about a mile up the hill from the cabin on the beach. The country-rock is granodiorite, in which occurs a small, sometimes pyritized, broken-up quartz vein in a wide shear-zone; the conditions are very similar to the *Surf Inlet* mine, except in the vein itself.

The property was bonded three or four years ago and had about 300 feet of tunnel driven on the vein, without encouraging results. Nothing has since been done on the property until this fall, when the owners cleaned out a caved-in portion of the tunnel and are continuing the drivage on the vein. Judging from surface indications and values and from the section of the vein exposed in the tunnel, the possibilities are not very attractive.

Paisley Point Mines, Ltd. This property was formerly owned by the Drum Lummon Mines, Limited, and has been described in previous reports. The company has a capitalization of $250,000, divided into 1,000,000 shares. The holdings consist of thirteen Crown-granted mineral claims on Drum Lummon bay, on the north side of Douglas channel, about 26 miles from Hartley bay, a port of call for the Union Steamship Company's boats. Work was resumed last year after the reorganization of the company and it was expected that sufficient capital would be forthcoming to proceed with the exploration of the property under efficient supervision. The sinking of a shaft in a promising part of the vein from the drift was started and an attempt made to get out some shipping-ore by sluicing the dump. Both of these plans were unsuccessful and the property has been idle during 1926.

Mineral Hill. This group, consisting of four mineral claims—*Mineral Hill Nos. 1*, *2*, *3*, and *Summit*—situated on Iron mountain up the Kitimat valley, about 8 miles from Kitimat Mission, is owned by Chas. Moore, of Kitimat Mission, and W. J. Goodwin. The *Mineral Hill* claims were staked in 1919, the *Summit* claim later, and all were Crown-granted this year. I understand that the showings are rather extensive ore-bodies of magnetite, carrying pyrite and some chalcopyrite. I have intended for some time to examine this property, but have not the time to make a special trip in the summer and the snow is generally on the ground when I am able to get down in the fall.

Rowe. Three mineral claims—*Starboard Watch*, *Canadian Girl*, and *Rio Costello*—constitute this group, which is owned by C. O. Rowe, Prince Rupert. The property is situated on the west slope of Noble mountain, Pitt island, about 1½ miles from the beach and at 950 feet elevation. The showing consists of a quartz vein occurring in a shear-zone in the granodiorite country-rock. The quartz is well mineralized with iron pyrites in bunches, in small parallel veins, and disseminated throughout the quartz. A short tunnel crossing the vein shows it to be from 4 to 6 feet wide, striking about north-south with the hill, and dipping from 40° to 50° into the hill. Some work was done on the property this year by the owner.

Standard. This group of five claims is situated on Gibson island and is owned by Frank St. Amour and associates, of Prince Rupert. The claims comprising the group are *Standard Nos. 2*, *3*, *4*, *5*, and *6*. It is an old group and has had considerable exploratory work done on it from time to time, which has exposed a mineralized width of about 65 feet, consisting of bands of quartz and limestone, carrying copper values averaging from 1 to 1.5 per cent. Only the annual assessments have been done for the past several years.

Trixie. This group (known as the Patterson) consists of five claims, owned by Frank Patterson, of Refuge Bay, and situated about a mile up the hill from Welcome harbour on the north-west point of Porcher island. There are on the property a number of parallel quartz veins, varying in width from a few inches up to 2 feet, lying in granodiorite formation. The mineralization in the quartz consists of iron pyrites carrying good gold values. The ore, when hand-sorted to over 50 per cent. pyrite, assays over $100 a ton in gold. Each year a small tonnage of hand-sorted ore is shipped by the owner, this year amounting to 82 tons of roughly sorted ore shipped to Anyox, yielding $57 a ton in gold. Further development-work is being done by the owner.

I.X.L. There are four claims—*Klim*, *I.X.L.*, *Nabob*, and *I.X.L. Fraction*—in this group, which is owned by A. E. Wright, of Prince Rupert. The group is south of and adjoining the *Trixie* group. The veins are pyritized, parallel quartz veins in granite, the same as on the *Trixie* group. Good gold values are obtained wherever the iron sulphides are found in the east-west veins. Development-work is being done on this group this winter. A centrally located small concentrator would serve both this and the *Trixie* group.

The claims covering the magnetite-iron showings on the north end of Pitt island and the east side of Porcher island are being kept in good standing by yearly assessments.

Canadian National Railway Section.

This includes all the country contiguous to the railway and the Skeena river from Prince Rupert to Terrace, a distance of 95 miles. In that distance there are 20 miles, from Prince Rupert east, of crystalline schists, and the remaining 75 miles is the Coast Range granodiorite; in all, not a very favourable formation for mineral deposition.

Autumn.—The only property on which anything is being done is the *Autumn* group of five claims—*Autumn No. 1*, *Autumn No. 2*, *Lottie*, *Happy*, and *Willington*—situated near Amsbury. The claims are owned by S. Alger, of Pacific.

Kitsumgallum Valley Section.*

It is interesting to note that this section was slightly prospected many years ago. A company known as the Eureka Copper Company was formed in Victoria to exploit the country around Kitsum-chi-lum lake on November 6th, 1863. The area proposed to prospect was a rectangle enclosing the whole lake. Owing to distance from transportation nothing further was done. The same company took up the entire north-west corner of Graham island for prospecting and mining in the same year.

This section, extending from Terrace, on the Canadian National Railway, north to Lava lake, a distance of about 40 miles, has only been prospected around Kitsumgallum lake. There is now a good wagon-road from Terrace to the south end of Kitsumgallum lake, a distance of about 20 miles. The east side of the valley is granodiorite formation, but from Amsbury to Terrace there is a belt of argillites, which extends north to Lava lake along the eastern border of the granodiorite, that should be a very favourable belt for prospecting.

The section around Kitsumgallum lake has had a fairly active season, both in prospecting and development work. A few tons of ore was shipped from two properties operated by D. W. Davis and associates.

Scenic. This group now consists of eight mineral claims—*Scenic*, *Log Cabin*, *Log Cabin Nos. 2*, *3*, *4*, and *5*, *Gully*, and another, of which I have not the name—staked and owned by John Garland, of Terrace. They are situated on Maroon mountain east of Kitsumgallum lake and reached by a good horse-trail 12 miles up Maroon creek, which empties into Kitsumgallum lake about half-way along its east shore. There is a comfortable small cabin on the claims at 4,000 feet elevation. The divide between Kitsumgallum lake and the Skeena valley is above the cabin at 4,500 feet, so that some of the claims lie on the Skeena slope at the head of one of the forks of Fiddler creek.

The general rock formation is sedimentary, intruded by many dykes striking, in general, with the sedimentaries, but smaller ones cutting the formation at any angle. There is a general dissemination of iron pyrites in the sedimentary rocks, and stringers of quartz slightly pyritized, on which the owner has put in a lot of useless time and work.

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* *See* Report by Geo. Hanson, Summary Report, Geological Survey of Canada, 1923, Part A.

There are two showings which I think warrant a little work. One of these is at 4,100 feet elevation on the Skeena slope, where an open-cut has been put in a silicified dyke about 6 feet thick, lying flatly in the sedimentaries. On the hanging-wall of this is a quartz vein about 8 inches thick, well mineralized with chalcopyrite. The remainder of the dyke is more or less mineralized with pyrite and chalcopyrite. Another showing along the divide shows a fairly well-defined vein of brecciated quartz and country-rock, mineralized with galena, zinc-blende, white iron, and chalcopyrite. This had just been broken into and looked more promising than the other exposures.

Bear. This group is also situated on Maroon mountain, on the south side, and near the head of Hall creek. There are five claims in the group; the *Bear*, *Cub*, and *Old Timer* claims are the original locations and the *Duplex No. 1* and *Duplex No. 2* have been later added. The showing is a quartz vein up to 4 feet in width, lying in a slaty, schistose rock, and mineralized with galena, zinc-blende, chalcopyrite, and iron pyrites, carrying fair gold and silver values and in places assaying high in gold.

Development consists of a lot of surface-stripping and open-cutting, tracing the vein for 600 to 700 feet, and a shallow shaft gaining a maximum depth of 20 feet on the vein. In 1925 a crosscut tunnel was driven 140 feet, cutting the vein at a depth of approximately 80 feet, showing it to be about 2 feet wide of milling-grade ore. In 1926 about 70 feet of drifting was done on the vein, both ways from the tunnel, exposing in places a good grade of milling-ore, the south drift face showing about a foot, well mineralized with pyrite, pyrrhotite, zinc, and galena, a sample of which assayed $14 in gold to the ton, 4 oz. in silver to the ton, 6 per cent. lead, and 10 per cent zinc.

The claims are under bond to D. W. Davis and associates, who propose to do some further work next spring.

Black Wolf Mining Co. This is an extra-provincial company, composed of Seattle and Eastern people, which I think has not been registered in the Province. The company has acquired from the original locators and owners the *Black Wolf* group, adjoining the *Black Bear* group on the south and containing the continuation of the *Black Bear* vein. There are five claims in the group—*Black Wolf Nos. 1, 2, 3, 4,* and *5.*

Last year considerable open-cutting and tunnel-work was done and some 300 sacks of ore was taken out as far as Kitsumgallum lake. Nothing further was done this year toward the development of the property, but further payments were met on the purchase price.

This property and the *Black Bear* are so intimately associated that they could be worked together very advantageously.

Goat. The seven claims comprising this group—*Goat, Kid, O.K. Fraction, Buck, P.M., He,* and *She*—are owned by G. F. Monckton, of Terrace, and associates. The claims are situated at about 4,500 feet elevation on the south side of Hall creek and just west of the *Black Bear* group. The showing is a small quartz-seam, from 2 to 6 inches thick, bedded with the argillite country-rock. It has been exposed along the face of the bluff for 100 feet or more. The quartz carries some galena and zinc-blende, but on account of its size and the limited length which it has been exposed it cannot be considered very promising. Similar showings have been found at different places on the claims, but do not give much evidence of enlarging to importance.

Marmot. There are three claims—*Marmot, Silver Grey,* and *Lakeview*—in this group, which is owned by A. Egan, of Terrace, and two partners. The claims are situated on the south slope of Goat mountain in sedimentary country-rock. A tunnel at 4,000 feet elevation has been driven 80 feet, of which the first 40 feet about parallels the vein. The last 40 feet turns to the left and some mineral showing in the face indicates the proximity of the vein. The proportionate values in the ore are about 30 per cent. lead and 5 per cent. zinc to about 14 oz. silver. There was a fair trail to the property, but it has not been very well maintained by the owners.

Douglas Creek.—More placer leases have been taken up on this creek and preparations will be made this winter to operate next season.

Glen No. 1. This claim is situated on Little Beaver river, on the west side of Kitsumgallum lake. The adjoining groups, the *Fisher* and *Brian Boru*, were under option to the Hopper-Davis Syndicate. Considerable work was done on a small quartz vein, lying in sedimentary country-rock, by way of surface-stripping and open-cutting for

a length of about 175 feet. This work exposed, in places, 18 inches in width of heavy sulphide ore, of arsenopyrite, zinc-blende, and a fair percentage of galena. It was therefore decided this spring to run a crosscut tunnel to obtain depth on the vein, and accordingly 173 feet of tunnel was driven, cutting the vein at 95 feet depth under the most promising of the outcrops. A drift of 15 feet was run on the vein. The work proved disappointing in that the vein did not show as well as on the surface in width or mineralization.

Assistance was granted by the Mines Department for the improvement of the trail up the Little Beaver to a very favourable prospecting area.

Silver Coin. This property, consisting of two claims—*Silver Coin* and *Silver Dollar*—and situated on the Dominion telegraph-trail about 3 miles north of Cedar River Crossing, was under option this year to the Hopper-Davis Syndicate. It is an old property and considerable exploratory work has been done on it. Two long open-cuts and a 65-foot crosscut tunnel show a brecciated quartz and slate vein up to 20 feet wide in sedimentary country-rock. Two or three short lenses of high-grade ore, consisting of steel galena, grey copper, some zinc-blende, and a little antimony, were uncovered on the surface, but no mineralization was found underground in the intersection of the vein by the tunnel.

This spring D. W. Davis, who was in charge of the affairs of the syndicate, improved the old road and trail from the head of Kitsumgallum lake to Cedar River Crossing, a distance of 10 miles, so that a truck could make the trip in about two hours. A shaft was sunk on one of the lenses of high-grade ore from the surface to a depth of about 20 feet. The ore, which was about 10 feet in length on the surface, gradually pinched out to nothing on all sides. About 8 tons of ore was sacked and taken to Terrace for shipment and the option on the property was given up.

Hopper-Davis Syndicate. This syndicate, under the business direction of D. W. Davis, and with J. M. Hoar supervising mining operations, has actively and efficiently worked on three properties in this section this year—*Glen No. 1* on Little Beaver river, *Silver Coin* group on Dominion telegraph-trail, and the *Black Bear* group on Maroon mountain. Headquarters were established at the head of Kitsumgallum lake. R. Farmin was in charge of the geological work, sampling, and assaying.

Late in the fall of 1926 another property was taken over, opposite Cedarvale, equipped with a good camp and supplies, and will be developed with a small crew throughout the winter.

D.W. Mines, Ltd.—This company was incorporated by D. W. Davis in November, with a capitalization of $1,000,000, divided into 1,000,000 shares of $1 each par value. The registered office of the company is Prince Rupert. The company takes over the operations of the Hopper-Davis Syndicate mentioned before.

Kalum Lake Mines, Ltd.—(*See* 1925 Annual Report.) This property, on the south-west end of Kitsumgallum lake, was closed down in September, 1925, and as yet has not resumed operations.

Other properties in the Kitsumgallum Lake section on which annual assessments have been done are described briefly as follows:—

Blue Grouse and Hunter.—(*See* 1918 Annual Report.) These are adjoining groups, situated about 18 miles up Cedar river from the head of Kitsumgallum lake. The showings are silver-lead. The owners are Oscar Olander, of Terrace, and partners.

Juneau (*Treadwell No. 2* group; *see* 1918 Annual Report), situated on the east side of Kitsumgallum lake. J. Belway Estate.

Jinny Jiggs and *Florence*, on the east side of Kitsumgallum lake, owned by Geo. Cobb, Terrace.

Lady group of five claims, situated on Maroon mountain, owned by L. Weeden.

Queen and Zinc.—The seven claims comprising this group were located and are owned by H. H. Jones. They are situated on Maroon mountain.

The *Motherlode* group (*see* 1923 Annual Report) on Maroon mountain.

Brian Boru group, Little Beaver river, adjoining the *Glen No. 1* claim.

Lakelse Valley Section.

This section refers particularly to Thornhill mountain, across the river from Terrace, and reached by way of the new steel bridge and auto-road to Lakelse lake.

Golden Nib. (*See* 1925 Annual Report.) This claim is situated at the foot of Thornhill mountain, opposite the 7-Mile post on the Lakelse wagon-road. The claim was bonded by O. P. Brown in 1925, who equipped it in 1926 with a jig-back tramway from the tunnel down to the foot of the hill. The showing consists of a quartz vein in sedimentary country-rock, in which on the surface is a section heavy in pyrite, carrying up to $70 a ton in gold values, depending on the percentage of pyrite. A tunnel driven about 100 feet on the vein below the croppings shows no mineralization to amount to anything, though the face is about under the surface ore exposure.

On completing the tramway, stoping was started on the surface and about 30 tons extracted and shipped. This about depleted the available ore and operations ceased. No returns of the ore shipped are available.

There are several properties in this section with considerable prospective merit which are worth looking over.

St. Paul Group.—(*See* 1925 Annual Report.) There are four claims in this group, which is situated on the summit of Thornhill mountain and is owned by Michaud Bros., of Terrace.

Society Girl Group.—This property adjoins the *St. Paul* group and contains the same vein. The owner is D. Mason, of Terrace.

Beaver Group.—(*See Lucky Seven* group, 1918 Annual Report.) There are four claims in this group, which is owned by Wm. Dahl, of Terrace. Some pockets of free gold yielding up to $2,000 have been found on this property.

Golden Penny.—This claim adjoins the *Golden Nib.*

Copper Queen.—This group of three claims is owned by Jack Bell, Terrace, and is situated at the head of Williams creek. (*See* 1925 Annual Report.)

NASS RIVER MINING DIVISION.

This Division extends from the mouth of Portland inlet north to the head of the Kitsault river, a distance of about 70 miles. The two mining centres are Anyox and Alice Arm. The Government recording office is at Anyox. There is a Government telegraph-office at Anyox and also one at Alice Arm. The Canadian National Coast-plying boats call at Anyox once a week and the Union Steamship Company's boat calls at Anyox and Alice Arm each week. There is also a tri-weekly launch service from Anyox to Alice Arm.

The town of Alice Arm, at the head of the arm of the same name, is the distributing centre of the Kitsault valley and tributary valleys, the Illiance river, and down Alice arm proper. The Dolly Varden Railway extends from tide-water at Alice Arm, 18 miles up the west side of Kitsault river to the *Dolly Varden* mine. Though the mine has been inoperative for the past three or four years, the Provincial Government maintains the railway for light traffic, such as hand-cars and gas-speeders, to enable prospectors and operators to get in supplies quickly and cheaply. From the upper end of the railway there is a first-class pack-horse trail to the head of the valley, 26 miles from Alice Arm, with branch trails up the main tributary streams. There are six bridges and two cableways crossing the Kitsault river at points most convenient for prospectors. There is also a first-class pack-trail for 16 miles up the Illiance river and fair trails up Lime and Roundy creeks.

During the summer there is a launch service once a week up the Nass river from Mill Bay (a port of call for the Union Steamship Company's boats) to Aiyansh. From Aiyansh roads extend through the Nass valley. There is a trail up the Nass river to Meziadin lake, thence to Stewart; a trail across to the Illiance river, thence to Alice Arm; a trail south to Kitsumgallum lake, following the Dominion telegraph-line, from the lower end of which there is a motor-road to Terrace, on the Canadian National Railway.

The Division is therefore exceptionally accessible for prospecting and operating, and transportation facilities are being improved and extended every year by the Mines Department.

It is the second largest producing Division in the Province, due to the immense copper-output of the Granby Company at Anyox, which has made a record production of over 38,000,000 lb. this year. The smaller producers are the *La Rose, Esperanza,* and *Golskeish,* the latter under operation by the Granby Company.

It was expected that the *Toric* would be on a producing basis this fall, but it will probably be June, 1927, before the concentrator is completed. The development of this property has no doubt been a great factor toward the restoration of mining confidence in this section.

An exhaustive examination was made of the *Dolly Varden* holdings early in the season by Dr. Slocum, who later extended his investigations to the whole Alice Arm section.

The bonding of four groups of claims, north of the *Dolly Varden*, in the "copper-belt" by Vancouver interests may have far-reaching results. Preparatory work by way of crosscutting is being carried on this winter.

Activities on the Kitsault river, on the North fork of the Kitsault, on McGrath mountain, and on Roundy creek indicate the revival of mining in this deserving Division.

Observatory Inlet Section.

Granby C.M.S. & P. Co., Ltd.

The company's big copper plant at Anyox has been in continuous operation throughout the year and has made its greatest production since being "blown in" in 1914. The concentrator last year was treating about 1,200 tons of ore a day. This year additions to the grinding machinery and improvements throughout have brought the plant up to an average of about 1,650 tons for the whole year. Early in 1927 it will have reached its objective capacity of between 2,800 and 3,000 tons a day.

A new sintering plant has been installed this year, which is being tuned up. It and the old plant improved will handle all the concentrates and confine all production to the company's own plant, instead of shipping a portion of the concentrates to Tacoma as heretofore.

The total tonnage mined this year from the company's *Hidden Creek* mines was 1,211,619 tons, an increase of about 40,000 tons over last year. Of this, 604,398 tons was smelted at the company's Anyox smelter. The remainder of 602,015 tons was milled, producing 52,840 tons of concentrates, a concentration ratio of a little over 11 into 1. Of the concentrates, 19,569 tons was smelted at the company's plant and 33,271 tons sent to Tacoma. The total production from the *Hidden Creek* mines was 7,316 oz. gold, 393,206 oz. silver, and 38,686,513 lb. copper.

In addition to this, there was shipped from the *Outsider* on Portland canal, operated by the Granby, 34,729 tons of ore, yielding 1,036,113 lb. copper, and from the Golskeish Mines, Limited, property, also worked by the Granby Company, 6,212 tons, yielding 570 oz. gold and 3,418 oz. silver.

The increase over last year of the combined *Hidden Creek* and *Outsider* mines was: 83,090 tons of ore mined, 319 oz. gold, or a little over 4 per cent.; 15,296 oz. silver, or about 4 per cent.; and 212,463 lb. copper, or nearly 5 per cent.

This year the output of the coke plant is as follows:—

Coke (short tons)	45,750
Gas (thousand cubic feet)	751,832
Tar (imperial gallons)	371,923
Tar paint (imperial gallons)	4,885
Ammonium sulphate (pounds)	468,350
Ammonia liquor (pounds contained ammonia)	126,564
Motor-fuel (imperial gallons)	50,066
Light oil (imperial gallons)	62,707
Creosote (imperial gallons)	225
Benzol forerunnings (imperial gallons)	2,230
Napthalene (pounds)	16,000

There was a total of 1,133 men employed, distributed as follows:—

Mining—		
Hidden Creek	393	
Golskeish	12	
Outsider	37	
		442
Concentrating		49
Smelting		180
Coke plant		23
Mechanical and draughting		166
Docks and transportation		58
Power		53
Townsite and hospital		101
Offices, stores, and warehouses		61

The personnel of the staff remains unchanged, as follows: Chas. Bocking, general manager; W. R. Lindsay, general superintendent; G. M. Lee, smelter superintendent; John Swanson, mine superintendent; George Leslie, coke-plant superintendent; W. B. Maxwell, concentrator superintendent; and C. M. Bagwill, chief accountant.

Hastings Arm Section.

This is the north branch of Observatory inlet.

Saddle. This claim is situated on the mountain west of the head of the arm; it was staked and is owned by Chas. Clay, of Anyox. In the fall of 1926 it was taken under bond, after examination by W. S. Harris, by the Northern Prospecting and Development Company, Limited, which was incorporated in 1924 with a capitalization of $25,000, divided into 250 shares, with its registered office at New Hazelton.

The mineralization consists of pyrite and galena, carrying good gold and silver values, in a quartz gangue. The country-rock is volcanic and within a short distance of the Coast Range granite. The vein is about 4 feet wide and has been traced on the surface by open-cuts and pits for 300 feet, showing ore all the way. The vein is divided into 2 feet of quartz carrying little or no mineral and 2 feet of ore which will average 42 per cent. lead, 38 oz. silver, and $7.20 in gold to the ton. There is no zinc showing on the surface.

No depth has been obtained as yet and, as the showing is on a flat bench, sinking will have to be done on the vein to obtain depth. The showings are at an elevation of about 4,000 feet overlooking Hastings arm and therefore ideally situated.

Alice Arm (Proper) Section.

This includes the country contiguous to the waterway, Alice arm, the east branch of Observatory inlet.

Mayflower. There are, I believe, eight claims in these holdings, four above the two claims of the old Molybdenum Mining and Reduction Company and four below them, from the cabin down to the beach. The general rock formation is sedimentary, the ore occurring in a series of parallel veins, striking N. 20° W. (mag.) and dipping between 60° and 70° W. Dykes parallel the quartz veins and just above the upper tunnel a wide belt of quartz and feldspar cuts across the strike of the veins. The fissuring continued through it, on which a tunnel has been driven for 45 feet. The veins are said to be found above the granitic rock and traced for some distance. A small ore-sorting house has been built here and a few tons of shipping-ore sorted from this tunnel and taken down to the cabin at the head of the old tramway.

About 65 feet vertically lower, another tunnel was driven in earlier operations. The first 25 feet is a crosscut to a quartz-seam, which was then drifted on for about 100 feet. This is a parallel vein to the one exposed in the upper tunnel. A crosscut was driven, cutting the west vein, but apparently it was not recognized, as the crosscut was continued and no work done on it. The vein on this level shows a width of about 2 feet, of which 6 inches is soft gouge on the footwall and the remainder a more or less quartzy filling, showing some galena and zinc.

This vein can be traced up the creek-bed from the cabin at 1,100 feet elevation to the upper tunnel at 1,500 feet elevation and beyond that for another 1,000 feet. Ore carrying good values in gold, silver, lead, and zinc is found in small lenses at different places. With such continuity and mineral indications, I think some work is warranted in drifting both in the top tunnel and on the same vein in the tunnel below it.

There is a good trail up from the beach and a good cabin at the old workings.

Keystone Mining Co., Ltd. This company was incorporated in 1923 with a capitalization of $200,000, divided into 200,000 shares; the registered office is in the Birks Building, Vancouver. The company's holdings consisted of the *Sunset* group (*see* 1922 Annual Report) of seven claims on Roundy creek—*Sunset Nos. 1* and *3*, *Crackerjack*, *Mollie Darling*, *45*, *Violet*, and *Storm King*—staked and owned by G. W. Morley, of Alice Arm, and partners. I understand that eight more claims have been added to the holdings this summer. The claims are at an elevation of about 2,300 feet and about 1½ miles from tide-water in an air-line.

This year work was started in May under the direction of Rowland King, mining engineer, of Spokane, Wash., with R. E. Griffith in charge at the property. The first work was repairing

the trail from Silver City to the claims so that pack-horses could get through with supplies. Two buildings were added to the camp, making a bunk-house, cook-house, and office, with accommodations for twelve men and cook.

The mineralization consists of pyrite, galena, and zinc-blende, carrying silver values, in a gangue of quartz. There are several of these quartz veins in a shear or fissure zone, about 50 feet wide, lying along the contact of argillite and the Coast Range granite.

About the end of June what is called the "Bowyer tunnel" was started at an elevation of 2,020 feet and driven about 400 feet, following a fairly well-defined quartz vein in the argillites. A number of small lenses or bunches of good ore were encountered, but the vein is badly leached and broken up in this formation so close to the surface. The bearing of the vein indicates that it will enter the granites in a short distance, where it is expected that more stable conditions and values will be found.

Two crosscuts, 17 and 25 feet, were driven from the tunnel, making the total season's work about 440 feet done by hand-work on a bonus-payment system. Altogether it has been a very creditable season's work. The company expects to resume work in the spring of 1927 as soon as trail conditions will permit.

Illiance River Section.

The zinc-showings on McGrath mountain have had considerable attention this season. Rowland King, M.E., of Spokane, who was directing the operations of the Keystone Mining Company on Roundy creek, made a complete compass survey of the claims and showings on the mountain, besides doing a lot of sampling.

Sunrise. There are eight claims in this group, consisting of *Sunrise*, *Silver Band*, *Lucky Strike*, and *Tip Top*, comprising the old *Silver Band* group, to which have been added the *Agnes*, *Blue Bird*, *Silver Tip No. 1*, and *Silver Tip No. 2*. The group is owned by G. W. Morley and associates. Exploration has been under the supervision of E. Ashton, one of the partners, who has done very creditable work in tracing and exposing the veins.

The general rock formation is sedimentary, with a general strike of about N. 40° W. (mag.), but badly distorted in places. There are numerous dykes, which as a rule conform with the strike of the sedimentaries. The veins all lie in the sedimentary belts and apparently are associated with porphyry containing secondary lime.

On the *Sunrise* and *Silver Band* claims ore has been exposed in several places. On Surprise creek an open-cut in a cross-vein, which strikes at about right angles to the main vein above and dips to the north, exposes an ore-shoot about 4 feet wide that will assay over 20 per cent. zinc. Above this showing, at 3,700 feet elevation, is another good showing of zinc, but there has been some faulting at this point. About 200 feet farther up the hill, on the creek, there is a cropping showing a mineralized width of about 30 feet, which is about half slate. A sample across 12 feet here gave 24 per cent. zinc. From this the vein is exposed at intervals along its general strike of about N. 40° W. (mag.) for a couple of claim-lengths, showing the vein to be from 2 to 6 feet wide, one cut showing about 7½ feet of good-looking zinc ore. Along the same zone, croppings have been found on the most northerly claim, the *Blue Bird*. Wherever exposed the veins show milling-grade ore.

The veins consist of quartz mineralized chiefly with sphalerite, a little galena occasionally, and small values in both gold and silver. It would therefore be a straight zinc proposition. The property would seem to have considerable prospective merit and to be worthy of some development.

Standard. As mentioned in the 1925 Annual Report, this group of four claims, owned by Miles Donald, of Alice Arm, was exploited by the Granby Company. Considerable exploratory work was done, but the property did not fulfil the requirements of the company. It is claimed that the extension of this vein has been found several claim-lengths higher up on the mountain.

Other claims on McGrath mountain show about the same class of ore, but nothing greater than assessment-work has been done on them. The growing demand for zinc will no doubt make McGrath mountain worth close investigation.

Other properties in this Illiance River section worthy of attention and the year's Annual Report in which descriptions may be found are: *Bellevue* group, 1920 and 1921; *Silver Bell* group, 1918; *Monarch*, 1919.

Kitsault River Section.*

This section includes the Kitsault River valley and tributary valleys, from tide-water at the town of Alice Arm to the head of the river, a distance of about 26 miles. It is one of the best-mineralized sections in the Province, has had enough development to expose some very attractive prospects, and is steadily progressing on its merits. The outlook for the coming year is the most optimistic this section has had for several years.

Wolf. This Crown-granted claim, situated right at Alice Arm, is owned by John Stark and is under bond to J. Fiva, who has been developing it. The showing is a quartz vein, bedded in sedimentary formation, and is from 12 to 14 inches wide, showing in places high silver values. No ore has been shipped this year; the work has been confined to driving a crosscut tunnel of 155 feet to the vein and about 100 feet of drifting on the tunnel-level, showing about the same as on the surface.

Esperanza. This property is one of the oldest locations in this district, from which small tonnages have been shipped for several years, aggregating probably $100,000. High silver values occur in a quartz vein in small lenses and bunches. The country-rock is sedimentary. The profits have not been large because of the erratic occurrences of high-grade ore, necessitating a great deal of dead-work. The property has only been worked on a small scale by hand. The installation of a small compressor, whereby some systematic, deeper development could be accomplished, and the addition of a small concentrator might make this a profitable property. Fifty-four tons of ore was shipped.

Alice Arm-La Rose Mining Co., Ltd. This company was incorporated in 1920 with a capitalization of $1,000,000, divided into 1,000,000 shares. The registered office is Prince Rupert. The holdings consist of four mineral claims—*Britannia, Britannia Nos. 1* and *3*, and *St. Elois*—situated on Paul Klayduc creek, about 2 miles from the railway, with which it is connected by a first-class horse-trail. The owners have made several small shipments of high-grade silver ore, and this year 42 tons was sorted and shipped, which netted the company about $100 a ton, mainly in silver.

Last year a crosscut was driven to the vein, which was then drifted on to a point under the old surface shaft and a raise then put through to the bottom of it. The drift on the tunnel-level is in a broken-up horizon of the vein, showing no mineral. However, ore was encountered about 20 feet up the raise and continued, more or less, through to the shaft, in places showing a foot of high-grade ore, accompanied by a foot or more of milling-grade ore. I have not been in the raise since it was completed and stoping started, but the results obtained of 42 tons shipped does not seem to be over-encouraging, in so far as profits for the further development of the property are concerned.

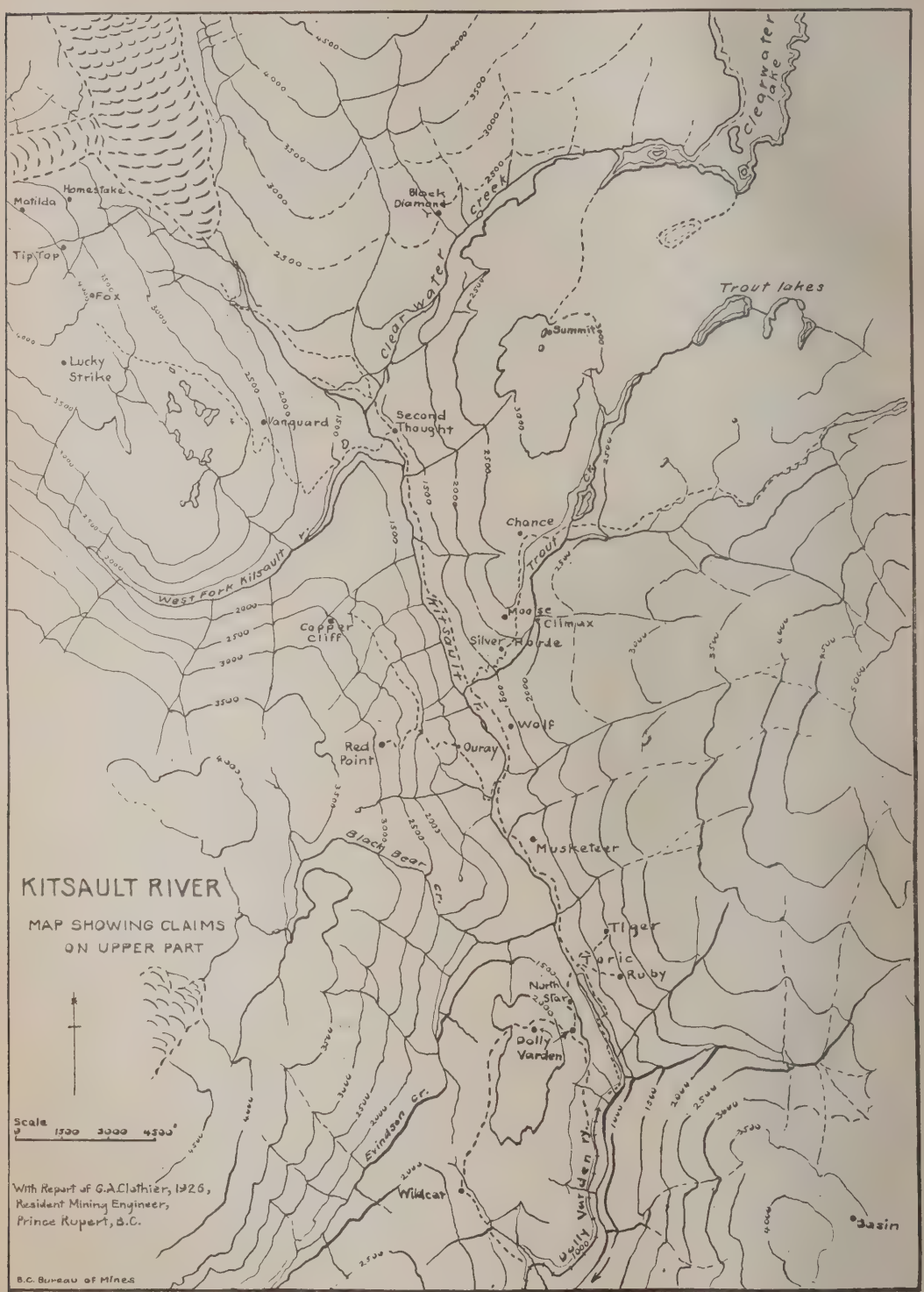
Any greater depth on the vein would have to be obtained by driving another crosscut tunnel from the surface, as the water-flow in the vein would prohibit sinking. Operations have been under the capable supervision of Miles Donald, one of the original owners of the property.

Speculator No. 2. This claim, owned by Jas. Calvin, of Alice Arm, and partners, adjoins the *La Rose* on the south and contains the extension of the *La Rose* vein. A shaft has been sunk to a depth of 30 feet on the vein, showing up to 2 feet in width of ore, carrying good values in native and ruby silver.

Kitsault-Eagle Silver Mines, Ltd. (*Eagle* group.) This company was incorporated in April, 1926, with a capitalization of $500,000, divided into 500,000 shares, with its registered office in the Standard Bank Building, Vancouver. W. G. McMorris is the managing director. The holdings of the company consist of three groups of mineral claims: The *Eagle* group of six claims—*Eagle, Eagle Nos. 2, 3, 4, Eagle No. 1 Fraction*, and *Eagle Fraction*—situated on the north side of Paul Klayduc creek; the *LeRoy* group of fourteen claims—*LeRoy, Anna Condon, Mountain View, Mountain View Nos. 2* and *3, Discovery, One Below Discovery, June, Summit, Canyon Nos. 1, 2, 3, 4*, and *5*—situated on the North-east fork of the Kitsault river about 8 miles from Alice Arm; and the *Silver Cord* group of two claims—*Silver Cord* and *Silver Cord No. 2*—situated on the east side of the North-east fork of the Kitsault river.

On the *Eagle* group a good log cabin was built at 1,500 feet elevation and the trail improved from the railway up to the camp; a crew of four men was employed. Considerable prospecting of the ground was done and several open-cuts put in at long intervals, resulting in tracing a

* G. Hanson: Summary Reports, 1922, Part A, and 1923, Part A, Geological Survey, Canada.


KITSAULT RIVER
MAP SHOWING CLAIMS
ON UPPER PART
Scale
1500 3000 4500
With Report of G.A.Clothier, 1926,
Resident Mining Engineer,
Prince Rupert, B.C.
B.C. Bureau of Mines
Clearwater lake
Clearwater creek
Trout lakes
Trout cr.
Kitsault r.
West Fork Kitsault r.
Black Bear cr.
Evindsen cr.
Wildcat
Dolly Varden cr.
Dolly Varden
Matilda
Homestake
Tip Top
Fox
Lucky Strike
Vanguard
Second Thought
Black Diamond
Summit
Chance
Moose
Climax
Silver Horde
Copper Cliff
Red Point
Ouray
Wolf
Musketeer
Tiger
Ruby
North Star
Basin

Porter-Idaho Pack-train, Portland Canal M.D.

Thibert Creek at Mouth of Berry Creek.

quartz vein about 10 feet wide for the length of two claims or more. The predominating country-rock is sedimentary. The vein is composed of about 5 feet in width of quartz and calcite and 5 feet or over of quartz and country-rock.

There is little or no mineralization showing in the lower cuts, but the higher openings look a little more encouraging. I understand that later prospecting still higher on the vein produced some very good values. It is a strong, well-defined vein and deserving of some prospecting.

The *LeRoy* and *Silver Cord* groups I have not examined. The company has had a small crew on each property this season, but only the work on the *Silver Cord* is being continued through the winter.

On the *LeRoy* group a great deal of surface work was done by way of stripping and open-cutting and a drift 100 feet long was run on the *Discovery No. 1* vein. W. S. Bacon, mining engineer, examined this group in the fall and has expressed himself as being very favourably impressed with the extent of the mineralization, surface values, etc. Assay values on the vein drifted on are given as running from $25.20 to $54.86 a ton in gold, silver, lead, and zinc.

On the *Silver Cord* group a vein stated to be from 4 to 30 feet wide has been traced the length of the two claims forming the group. In October a tunnel was started following the ore along the hanging-wall. At the end of the year it had been advanced to 105 feet, gaining about the same footage in depth from the surface. Samples from this tunnel show a high zinc content, up to 29 per cent., with a little silver and gold.

The company is to be commended for its aggressive work this year. Improvements to the trail and a bridge across the North-east fork of the Kitsault river will be recommended to the Department of Mines toward assisting the development of this section.

Zorka. This group consists of the following claims: *Zorka, Zorka No. 1, Zorka No. 2, Standard, Midnight No. 1,* and *Midnight No. 2,* situated on the Dolly Varden Railway, about 13 miles from Alice Arm, and owned by A. Serbich. The country-rock in this vicinity is sedimentary. Two tunnels have been driven; one at the level of the railway-track is in 38 feet and another about 10 feet lower, below the railway, has been driven 20 feet. The track-tunnel has been driven along the south side of a 5-foot porphyry dyke striking S. 28° W. and dipping about 75° N.W. About 2 feet north of this dyke there is a hornblende-porphyry dyke about 2 feet wide paralleling it. On the north side of the hornblende dyke a small section of a vein about a foot wide is exposed, dipping north-east and cut off by the smaller dyke, on the other or south side of which and between the two dykes is a small faulted section of the vein. No vein could be found on the south side of the larger dyke. The upper or track tunnel shows a small streak of lightly pyritized quartz showing a trace of chalcopyrite.

The lower tunnel lies north of both dykes and follows a couple of streaks of calcite carrying chalcopyrite. The vein at the track-level shows about a foot of heavy sulphides of iron and copper and is fair-looking ore. Little depth could be obtained other than by sinking on the vein on the north side of the dykes, as it is only a few feet down to the river. I therefore think the best prospecting would be toward picking up the vein south of the dykes above the track-tunnel.

Ouray. The original claims were the *Ouray* and *Bertha Fraction,* staked in 1916 by Egan & Carpenter. I do not know whether any other claims have been added to the group or not by the present owners, S. Dumas, of Alice Arm, and partners, D. Robertson and C. A. Egan. The claims are situated on the west side of the Kitsault river, adjoining the *Wolf* group of the *Dolly Varden* properties. The trail to the *Copper Cliff* group above crosses the showings at 1,500 feet elevation.

The country-rock is grey andesite. The vein has been opened up along the edge of a bench for several hundred feet by numerous open-cuts and stripping. These exposures of the vein show it to be at least 4 feet wide, striking about north-south and dipping easterly, and therefore lying with the slope of the hill. The vein-filling is quartz and calcite, mineralized with pyrite, chalcopyrite, and galena, with possibly a trace of grey copper, though I could not be certain. The percentage of mineral would make it a good milling-ore. Some depth on the vein could be obtained by crosscutting from the bench below, but from there sinking on the vein would be necessary.

In the absence of any of the owners I was not sure of the location of the west line of the *Wolf* group, but it must be comparatively close to the line of croppings of the *Ouray* vein, in which case, with the vein dipping toward the *Wolf* ground, it might restrict the vein on this

ground. Considering its location, etc., it is a promising showing. A new cabin is under construction.

Lucky Strike.

There are eight claims in this group, owned by W. McLean, J. Hauber, and partners, of Alice Arm. The claims are *Lucky Strike* and *Lucky Strike Fraction*, *Rambler*, *Sunnyside*, *Porcupine*, *Cascade Fall*, *Silver Crown*, and *Siren*, situated north from the West fork of the Kitsault river. On the *Rambler*, the south claim, a tunnel has been driven across a vein, striking N. 28° W. (mag.), showing its width to be 16 feet of a breccia of slate and grey rock, cemented with feldspar, calcite, and quartz, which are liberally sprinkled with pyrite and chalcopyrite, and assaying from $2 to $5 a ton in gold. Ribs of sulphide in the decomposed surface rock would assay up to 7 or 8 per cent. copper, but the whole would average low because of so much oxidation. Sufficient depth to get below surface effects might show lenses of good ore and a fair average value. This shear-zone has been traced north for over 600 feet, but, as the surface along the vein is comparatively level, depth on the vein could be obtained only by sinking.

On the *Porcupine* claim, just north of the cabin, an open-cut exposes a vein similar to that on the *Rambler*, badly broken up on the surface. It is from 10 to 12 feet wide and shows considerable pyrite and chalcopyrite. About 200 feet east of this showing another vein has been uncovered, striking N. 70° E. toward the above-mentioned parallel veins. This vein is also a shear-zone, stands perpendicularly, is from 10 to 12 feet wide, and consists of quartz and calcite heavily mineralized with pyrite and chalcopyrite, with a little galena and zinc-blende showing in places. About 4 feet on the west wall is exceptionally well mineralized with pyrite and chalcopyrite. Altogether this is an attractive ore-exposure and warrants deeper exploration. Unfortunately the ground is so flat here that depth could not be obtained by tunnelling.

Pieces of the general run of mineralized quartz assayed to obtain the proportionate values gave $2.40 in gold, 8.6 oz. in silver to the ton, and 2 per cent. copper. There are several isolated croppings on the flat that have not been traced anywhere.

On the *Lucky Strike* claim, at 3,800 feet elevation, is the largest showing on the group. A trench across another brecciated vein shows its width to be 20 feet. Like the others, the vein gangue is quartz and calcite cementing the country-rock fragments, the whole well mineralized with pyrite, chalcopyrite, and also showing some galena and zinc-blende. The owners claim assays from here of 3 oz. gold and 65 oz. silver to the ton. The open-cut gives a depth of about 8 feet, but the vein is still full of oxidized seams.

On the strike of the *Lucky Strike* and *Cascade Falls* croppings an open-cut and shallow shaft at 4,300 feet elevation exposes a width of several feet of decomposed material, in which are ribs of stibnite and arsenical iron, with specks of galena and zinc-blende. This cropping is on the West Fork slope and strikes N. 70° E. A grab sample for possible silver values gave a trace of gold and 0.4 oz. silver to the ton. Still farther north on the *Lucky Strike* claim, at 4,600 feet elevation, an open-cut shows 12 feet in width of brecciated grey country-rock, quartz, feldspar, and calcite, in the centre of which there is about 2 feet of calcite well mineralized with chalcopyrite. It is a strong, well-defined vein in grey andesite. A number of slate-croppings can be seen on the higher ground to the top of the mountain.

Judging from the ore-exposures on these claims and farther north on the *Vanguard* and *Homestake* groups, it would appear that in this copper-belt there are two series of parallel shear-zones, one striking with the range at about N. 28° W. (mag.) and the other at N. 70° E. (mag.), with such strong mineralization in each zone that their intersections should be most interesting.

These claims have been staked for a number of years and the owners have done a very creditable amount of work, but of course inadequate toward opening up the property to any extent. The property warrants investigation. This ground lies south-west of and above the *Vanguard*, now under bond to Vancouver interests.

Red Point, Copper Cliff, Vanguard, and Homestake.

These groups lie in the copper-belt* on the west side of the Kitsault river, extending north from Evindsen creek, just north of the *Dolly Varden*, to the West arm of Kitsault glacier. The four groups have recently been bonded by Vancouver interests and a 500-foot crosscut tunnel is being driven this winter by contract on the *Red Point*. The *Red Point* and *Copper Cliff* may be described as containing a wide belt of disseminated pyrite, chalcopyrite, and pyrrhotite, in which are gash-veins of more concentrated mineralization.

* Hanson, George: Summary Report, 1921, Part A., G.S.C.

The *Vanguard* group (*see* 1918 Annual Report) of four claims is owned by Morris Peterson and the Strombeck Bros. and is situated about 4 miles north of the *Dolly Varden*. There is a good cabin at the workings, at 2,900 feet elevation, reached by a good horse-trail and bridge across the Kitsault from the main Kitsault trail at the *Second Thought* cabin.

There is an exceptionally fine surface showing of chalcopyrite at 3,000 feet elevation, striking S. 70° W. (mag.) and dipping about 62° to the north. A tunnel was driven underneath this on a bearing of S. 20° W. (mag.), cutting the vein at 50 feet from the portal, where it shows a little pyrite. The vein was then drifted on toward the surface showing with little or no improvement. The main tunnel was then continued 12 feet to make sure that the proper vein had been cut.

This year driving was resumed in the drift and at the time of my examination was in 50 feet from the tunnel. At about 12 feet from the present face chalcopyrite came in on the north side of the main seam or "vein." This side is about 2 feet wide, of sulphides, of which 1 foot is solid chalcopyrite. On the left, south side, the filling is 4 feet wide to the perpendicular "hanging-wall" and is mainly calcite, in which are small lenses and veinlets up to 2 inches wide of chalcopyrite, altogether a very promising-looking face.

I understand that under the present bond terms a long crosscut tunnel will be driven to obtain a considerable depth under the good surface showing.

The *Homestake* group (*see* 1918 Annual Report) consists of four claims owned by A. Davidson, of Alice Arm, and is situated, at a general elevation of 3,500 feet west of the lower end of Kitsault glacier, 26 miles from Alice Arm. The general rock formation is the greenish andesite or andesite breccia of the copper-belt.

There is a wide shear or breccia zone, up to 50 feet in places, running the full length of the claims, in which are several siliceous parallel veins, mineralized with pyrite, chalcopyrite, galena, and zinc-blende. The general strike of the mineralization is roughly east-west (mag.). It has been exposed across its full width by several open-cuts, showing a fair amount of mineral, but evidently low grade. Two or three small veins carrying more chalcopyrite have been exposed. These strike at N. 70° E. and improve the mineralization in the main zone at the intersections.

Considerable work was done while the property was under bond to the Consolidated Homestake Mining and Development Company, now operating the *Toric* group. The work, however, was insufficient to be conclusive in any way. The width and continuity of the mineral-zone and its favourable location for mining I think warrant its considerable exploration in the hope of obtaining at least milling values. There is a good wide trail to the property that can be used as a winter road.

Kitsault River Mining and Development Co., Ltd.

(*See* 1925 Annual Report.) This company has a $1,000,000 capitalization, divided into 1,000,000 shares, with its registered office in Alice Arm. There are eight claims in the holdings, situated adjoining the *Homestake* group up the hill. The available funds have been well expended, but lack of capital has curtailed this year's work. It would seem to have about the same prospective merits as the *Homestake*—the possible development of an ample tonnage of milling-ore.

Climax.

The two claims of this group, the *Climax* and *Climax No. 2*, have had considerable prospecting done on them by the owner, Olier Besner, of Prince Rupert. They are situated on Trout creek, adjoining the *Moose* and *Silver Horde* groups. There is a good horse-trail from the main Kitsault River trail to the camp. The country-rock is grey tuff, locally called the silver formation.

The main work is a tunnel at 2,350 feet elevation, 50 feet long, on the foot-wall and a crosscut 24 feet at the end of the tunnel showing a cross-section of the vein, which at this point is 21 feet wide. The gangue of the vein is quartz, with andesite, mineralized with pyrite, galena, and zinc-blende, the pyrite fairly well disseminated and the galena and zinc in small bunches. Patches show ruby silver. The average values are low, but faulting, characteristic of this region, may be expected, along which the secondary silver enrichment may make very high-grade ore. I think the width of the vein and mineral indications justify further development.

Moose.

(*See* 1921 Annual Report.) There are five claims in the group, situated adjoining the *Climax* and about 3½ miles from the terminus of the Dolly Varden Railway. The owners are Miles Donald, of Alice Arm, and associates. As no work has been done since 1921 the reader is referred to the Report of that year.

Silver Horde. A. Davidson, of Alice Arm, and partners own the four claims comprising this group. The showings are similar to the *Moose* and *Climax;* that is, a pyritized quartz, carrying low values in galena, zinc-blende, and scattered silver sulphides. This property, with the *Moose*, *Climax*, and *Chance* groups, would make a good combination for extensive exploration.

Tiger. (*See* 1918 Annual Report.) Ed. Pickett, the owner, staked the two claims in the group, *Tiger* and *Lion*, in 1916 and since then has done a considerable amount of prospecting and development work on them. The *Del Norte Fraction* was added to the group this year. The claims are situated north of and adjoining the *Toric* group on the east side of the Kitsault river.

The general rock formation, according to Geo. Hanson, is a hard, grey, fine-grained tuff. The showing is a quartz vein up to 12 to 14 feet wide mineralized generally with pyrite, but in places showing a little galena and zinc-blende, with which is associated a little ruby silver and flaky native silver on the seams. A diamond-drill hole south of the tunnel showed 5 feet of 60-oz. silver ore in Block B and up to 200 oz. silver to the ton across a width of 5 feet in Block C.

Two sets of faulting have evidently occurred—namely, a vertical western movement and afterwards a shear to the south and east—resulting in several blocks of the vein being shifted first to the west and then to the south-east. The crosscut tunnel crossed the main vein just on the fault-line, and a drift to the south on the hanging-wall, driven since, shows good ore in places. The tunnel apparently passed to the left of and under the first block below the main vein; the next block was crossed in a lean place and the lowest block is to the left of the tunnel. The owner has driven four drift-cuts from the tunnel and has picked up two of the displaced ore blocks. There would seem to be a good chance of opening up ore-bodies averaging milling grade.

Consolidated Homestake Mining and Development Co., Ltd. (Toric Mines, Limited.) (*See* 1925 Annual Report.) This company has been developing the *Toric* group of four claims for the past two years. The claims—*Toric, Angelo, Moose*, and *Lamb*—were surveyed this year and Crown grants obtained in March. Application has been made to change the name of the company to the Toric Mines, Limited, and to increase the capitalization of the company from $500,000, divided into 100,000 shares, to $625,000, divided into 125,000 shares. The registered office of the company is in the Credit Foncier Building, Vancouver. A. C. H. Gerhardi is the managing director and Geo. N. Joy is secretary-treasurer.

The work underground in 1926 consisted of a drift 70 feet in length from the No. 1 crosscut east. This has been in the ore-body all the way, in places showing spectacular ore carrying ruby and native silver, the whole averaging good milling-ore. A crosscut will now be driven from the end of this drift to the hanging-wall of the ore-body.

The main work of the season has been the construction of a 50-ton concentrator at the mine with a crushing capacity of 100 tons in twenty-four hours. The structure, including tramway and snow-shed, ore-bin, crusher plant, and main building, is completed and the machinery partially installed. It was expected that the plant would be in operation late in the fall, but the delayed delivery of machinery prevented this and operations were closed down for the winter, to be resumed as early in the spring as transportation conditions will permit.

The flow-sheet of the concentrator is simple, consisting briefly of: Mine-run ore to 260-ton ore-bunker; to 10- by 9-inch Blake jaw-crusher; to 18-inch conveyor-belt to 240-ton crushed-ore bin; automatic feed to 30- by 14-inch Traylor rolls; to 14- by 3-foot Dorr classifier; undersize (80-mesh) to two No. 6 Wilfley tables; oversize to 5-foot by 22-inch Hardinge mill to barrel amalgamator; the discharge back to classifier.

While there has been no vertical work done to prove actual "ore in sight," the horizontal development surely indicates an immense tonnage of ore averaging a fair milling grade. By a little selective mining the grade of the mill-feed may be raised until the milling capacity is able to handle the lower-grade ore.

Mr. Gerhardi states that the finances of the company are in a very satisfactory condition. I see no reason to doubt that this property, continued under efficient management, will become a very important producer and prove a profitable undertaking.

PORTLAND CANAL MINING DIVISION.

This Division includes the country north of Pearce island, in Portland inlet, on the east side of Portland canal (the west side is Alaska), to the summit of the range between Portland canal and Observatory inlet, and north to Mount Brown, from which point northwards it takes in the whole drainage area of the Nass river. The northern portion, though over the Bear River divide, is included in this Division, for the reason that it is reached by way of Stewart, where the Government office is located.

Stewart, at the head of Portland canal, is the distributing centre of the Division. It is the most northerly seaport in British Columbia and therefore the logical outlet for all the Northern Interior country. There is a Government telegraph-office at Stewart and a radio-office in Hyder, on the Alaska side. Stewart has a weekly boat service by both the Canadian National and Union Steamship Companies.

Salmon River valley has been provided with a good auto-road to the *Premier* and *B.C. Silver* mines, a distance of 17 miles. This is continued as a wide trail through to the upper valley of the Salmon river, branch trails making all parts of the valley accessible.

The Bear River valley has a wagon-road from tide-water to the junction of American creek, a distance of 14 miles. The Portland Canal Short Line Railway, built by Sir Donald Mann in 1910–11, is entirely out of commission. The wagon-road is now only passable for 8 miles, but it is hoped that the connecting portion at Muddy gulch will be built this year. From American creek the main Bear River trail continues from the end of the wagon-road over the Bear River divide and down to Meziadin lake. A reconnaissance was made this summer toward the extension of the trail from Meziadin lake north to Telegraph Creek. Branch trails up the different tributaries to Bear river make the whole valley very accessible.

The Marmot River valley transportation facilities have been greatly improved by the construction of a wagon-road from tide-water to the forks, about 3½ miles. It will have to be gravel-surfaced before being serviceable for hauling. From the forks pack-trails have been built up both forks of the river. A float and approach thereto has been built by the Federal Government on Marmot bay. It has not been as serviceable as desired on account of lack of room on the approach for pack-horses. It will have to be enlarged to meet the requirements of trucks when used on the new road.

As predicted last year, this has been an exceptionally busy mining year throughout this Division, each section (which *see*) contributing its share to the general progress.

The district has been further favoured by the survey of the Bear River section by the Dominion Geological Survey under the able supervision of Geo. Hanson.

Much construction and improvements of roads and trails has been done this year in this Division. The recognition of this as an all-important factor in building up the mining industry and the policy of the Mines Department in furnishing assistance to prospectors and operators under the "Mines Development Act" have had a very beneficial effect.

Portland Canal Section.

This includes the country bordering Portland canal on its east side from Pearce island to its head at Stewart, and is a portion of the Portland Canal Mining Division, with which it should not be confused.

Outsider. There are eight claims in this group—*Elsie*, *Tunnel Fraction*, *Copper King*, *Regina*, *Hope*, *Brown*, *Summit*, and *Constance Fraction*—situated at Maple bay, about 35 miles down the canal from Stewart. It is the old *Brown-Alaska* group, equipped and operated in 1916, shipping a low-grade siliceous copper ore to the Hedley smelter. It is now owned by Martin Woldson and associates, of Spokane, Wash., and operated on a royalty basis by the Granby Consolidated. In 1926 it produced 34,729 tons of ore, yielding 1,036,113 lb. copper.

Big Mike. There are six claims in the group—*Big Mike*, *Patsie*, *Molly O*, *Paddy Doyle*, *Sally*, and *Danny Doyle*—staked in 1925 by Mike Milesovich, John D. McDonald, and H. Wilkinson, of Stewart. The claims are situated on the east shore of Portland canal, about 5½ miles south of Stewart. The country-rock is granodiorite of the Coast range. The mineralization is mainly pyrite, together with some galena and zinc-blende in a quartz vein which averages about a foot in width. The vein has been exposed in two places; at the lower point a tunnel has been driven a short distance on the vein just

above high-tide mark. Spots in the vein here show native gold, but a sample from the vein at the face gave no values. Probably 50 feet above the tunnel a few shots have been put in, showing the vein to be a few inches wide and showing some galena. A sample of this assayed $32 in gold to the ton and a trace of silver.

It is certainly a handy location, but whether it can be worked profitably or not of course depends on the mineralization, the extent of which can only be determined by work.

Georgia River Section.

This is the valley of the Georgia river, which empties into Portland canal on the east side, about 18 miles down from Stewart. There is a fair foot-trail for about 10 miles up the river from its mouth.

M.J.

The only property examined in this section was the *M.J.* group. It is owned by Jas. Lydden, of Stewart, and consists of six claims—*L.J. Nos. 1* and *2*, *M.J. Nos. 1* and *2*, and *Little Pat Nos. 1* and *2*—situated about 3½ miles from the beach. The showings are quartz veins occurring in a quartz diorite or granodiorite formation. The quartz is mineralized with pyrrhotite and chalcopyrite. A sample of the heavy sulphides assayed only a trace in gold and 0.6 oz. in silver to the ton, but 12 per cent. copper. There are apparently two or more veins.

The lower exposures are at 2,100 feet on the *L.J. No. 1* claim, where a couple of open-cuts have been put in about 100 feet apart and the vein stripped between, showing its strike to be N. 60° W. and dip about 75° N.E. The lower of these cuts shows 18 inches of nearly solid chalcopyrite.

The upper showings are on the *M.J. No. 1* claim at 2,350 feet, here showing a foot or more well mineralized with chalcopyrite, standing perpendicularly along a ridge of granodiorite containing epidote, striking N. 30° W. Little work has been done, but the mineralization crops for about 100 feet. These showings are in themselves worth opening up and indicate a worthy area for close prospecting.

North Country Mining Co., Ltd.

This company was incorporated in November, 1923, with a capitalization of $2,000,000, shares at $1 par value each. The registered office is in Vancouver. The holdings of the company consist of the *Gloria* group of twelve mineral claims, owned by the Gloria Mining Company, Limited, and situated at the head of Georgia river and Bull Dog creek, about 3 miles from Portland canal in an air-line. There is nothing but an old foot-trail to the property as yet.

The general rock formation is igneous, probably a coarse quartz diorite, in which are many basic dykes running in a general east-west direction.

Three tunnels have been driven on the property under the supervision of A. Linke, who was the original staker. The lower tunnel just above the old cabin has been driven 60 feet, but does not show any mineralization of importance. At 3,150 feet, or 250 feet above the new camp, a tunnel has been driven 250 feet in granodiorite. There was no mineral of any kind showing and Mr. Linke explained that its objective was the cutting of "ledges" ahead. These ledges are quartz-porphyry dykes, along the walls of which are found bunches of mineral consisting of galena, sphalerite, and pyrite. Higher up, at 3,400 feet, another tunnel had been driven 230 feet, in which an occasional patch of mineral was found. This is also being driven toward cutting "ledges" ahead.

The undertaking has had the favourable report of the company's engineer and I understand that work will be confined to driving one tunnel. Assistance toward getting some sort of trail to that area will be recommended.

Several groups of claims have been staked in this area. D. A. McDonald, at the head of Bull Dog creek, has opened up a couple of small veins at an elevation of about 3,000 feet, which show some solid galena, assaying 35 oz. silver to the ton, 50 per cent. lead, and $4 a ton in gold. He built a foot-trail down Bull Dog creek to tide-water this season, making his claims accessible.

Marmot River Section.

This has been a very active section this year and some very high-grade ore has been shipped. The outstanding discovery of the season has been made in the *Prosperity* property lying above and adjoining the *Porter-Idaho*. This and another group adjoining the *Porter-Idaho* on the north have been acquired by the Premier Gold Mining Company, which will commence development in the spring of 1927.

Sterling Silver Lead Mines, Ltd.

This company was incorporated in March, 1925, with a capitalization of 2,500,000 shares at $1 par value each, with its registered office in the Pemberton Building, Victoria. The company acquired on option twenty-two claims in the Marmot section, including the *Wire Gold* group of four claims, *Forks* group of two claims, *Dwyer* group of three claims, *Fraser* group of seven claims, *Mountain View*, *Mountain Boy* and *Mountain Top* claims, *Crawford* claim, and *Elizabeth* and *Grand Canyon No. 1* claims; all situated between the North and South forks with the exception of the *Wire Gold* group, lying below the forks. The organization is under the management of Tom Campbell, Stewart.

Difficulties in financing arose and I understand that the company and holdings have been taken over by the International Metals Exploration Company, a Seattle organization, with offices at 912 Hoge Building, Seattle, Wash. This company is registered in British Columbia, with office at 622 Standard Bank Building, Vancouver. The authorized capital is $495,000, fully paid up. T. S. Waltemeyer is secretary of the company. It is stated that development-work will be commenced early in the spring of 1927.

Porter-Idaho Mining Co., Ltd.

(*See* 1925 Annual Report.) This company was incorporated in January, 1925, with a capitalization of $2,000,000, divided into 4,000,000 shares, with its registered office in Stewart. The company's property is comprised of the following mineral claims: *Gem of the Mountains*, *Lucille*, *Slide*, *Nettie L.*, *Prickly Heat*, *Sunday*, and *Never Sweat*, situated west of the glacier at the head of North fork of Marmot river and staked by Clay Porter and associates. There are four mineralized zones or veins on this property in volcanic formation; one, containing two veins, strikes east and west; the other three strike north-easterly and south-westerly. Last year the two easterly of the north-south veins produced all the ore shipped and work was resumed on them again this year, but the ore-shoots encountered by hand-mining were few and not sufficiently productive to make steady shipments. All these veins are highly oxidized on the surface and contain only short shoots of sulphides and carbonates, which constitute the shipping-ore. Later in the summer the west vein was discovered and proved a life-saver, so far as shipping-ore was concerned. Shipments were started in September and continued until snow fell. In that time 174 tons of ore was shipped to Trail, yielding 16 oz. gold, 70,090 oz. silver, and 108,403 lb. lead, the value of which was $48,801.

Last year a crosscut tunnel had been driven, cutting the two veins in the east-west zone. Early this year, during the winter, some 500 feet of drifting was done on one of these veins east to the intersection of the middle vein of the north-south series. This work showed that the oxidation still persisted at that depth below the surface of over 100 feet. No ore of shipping grade, except by sorting, was found, but the indications are that an ample tonnage of milling-grade ore could be developed to warrant a mill.

During the year 1,311 feet of development was done—885 feet drifting, 65 feet of winze, and 161 feet of crosscutting.

Another lower crosscut tunnel has been started, and up to the end of the year about 200 feet had been driven, to cut the east-west shear at a depth of 450 feet on the dip of the veins. It is expected this work will be through by April 1st. Drifting can then be done on the east-west veins to the intersections of all three of the north-south veins, which in turn can be drifted on at a depth which should be under the surface oxidation.

If the extent of mineralization and values at the depth of this new work come up to expectations, as indicated by all the surface exposures and what deeper work has been done, this will make one of the great mines of the district.

Clay Porter, the original staker and owner, is still managing director, ably assisted by Joe Moran, mine foreman.

Prosperity.

This consists of the seven claims—*Prosperity*, *Prosperity Fraction*, *Tea Pot Dome*, *Honest John*, *View*, *Gargoyle Fraction*, and *E.X.*—situated above and adjoining the *Porter-Idaho* ground. The claims are owned by F. R. and L. E. Jancowski, Eli Watland, G. D. Davis, and Geo. Mehlfeld, and have recently (1927) been bonded to the Premier Gold Mining Company. During the season of 1926 the vein on which the *Porter-Idaho* was mining was traced up the hill into this ground. The owners opened up the vein, which shows in places a width of 5 feet of solid galena, assaying around 500 oz. silver to the ton. Sacking ore was started late in the fall and 29 tons was shipped out before the snow came,

giving smelter returns of 2 oz. gold, 12,072 oz. silver, and 15,004 lb. lead, or about $250 a ton. The property is readily reached by the *Porter-Idaho* trail.

Melvin. This group of four claims—*Melvin, Donald, Melvin No. 1 Fraction*, and *Melvin No. 2 Fraction*—is owned by Della and N. H. Stevens, of Hyder, Alaska. The claims adjoin the *Porter-Idaho* property on the north. This group has also been bonded by the Premier Gold Mining Company, Limited.

Marmot Metals Mining Co., Ltd. (*See* 1925 Annual Report.) This company was incorporated in 1925 with a capitalization of $1,500,000, divided into 3,000,000 shares. The registered office is at Stewart. The company's property consists of the *Montana* group of five claims and the *Horseshoe* claim, situated on the north side of the South fork of the Marmot river, about 4 to 5 miles from the beach. A considerable amount of development was done last year on the *Montana* group, but this year's development has been confined to the *Horseshoe* claim, overlooking the north branch of the Marmot glacier, which has to be traversed to reach the camp and showings, making a very unserviceable trail for the time being. The camp is at 3,300 feet elevation, or 1,200 feet above the glacier at the foot of the mountain.

The general rock formation is volcanic, but the mineral-showings consist of zinc-blende replacements in a wide limestone-belt, which can be plainly seen from the glacier on the abrupt end of the mountain. The limestone-belt is from 200 to 300 feet wide, distinctly faulted laterally into four blocks, the second block from the summit containing the main mineral-showings so far as yet known.

The work done this year consists of a number of open-cuts in the zinc-blende croppings and a tunnel driven 30 feet toward getting under a big cropping. This, I am informed, was encountered later and developed a very satisfactory ore-body. One cut, about the centre of the lime-mass, shows a width of 15 feet, averaging 17 per cent. zinc, which occurs in bunches and parallel veins and carries small values in gold and silver, though in places up to $20 a ton in gold has been obtained.

Another cut on the northern border of the limestone at its contact with schistose porphyry shows a width of mineralization of 12 feet. Lower on this contact a tunnel has been driven about 50 feet, opening up an ore-shoot which crops about 50 feet above. Other cuts have been put in at different places in the limestone.

These surface showings certainly indicate ore-bodies of great prospective importance, but not enough development has been done as yet to give certain evidence of the extent of the limestone and consequently the extent of the ore-bodies. The property is under the superintendency of Angus McLeod.

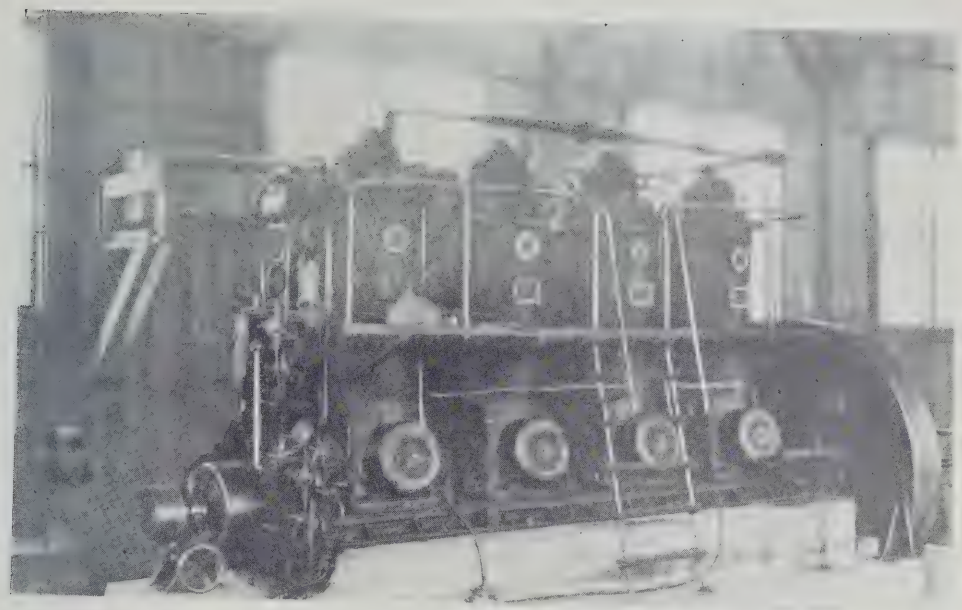
Washington. These claims are situated at the head of the South fork of Marmot river, on the north side, about 7 miles from tide-water. The group consists of the seven claims—*Ellen, Ruth, Vivian, Carrie, Black Bear No. 1*, and *Castle Hill*—owned by R. E. Lundvall, the original staker, and Captain Donald and associates. This year assistance was granted by the Mines Department for the construction of a trail from the north side of the glacier up to the property at 3,550 feet elevation, enabling pack-horses to reach the camp.

The general rock formation is the immediate contact north of the Coast Range granodiorite, therefore consisting of more or less broken up sedimentaries and volcanics. The work done up to the time I was on the property in September consisted of a 240-foot tunnel, the objective of which was to intersect certain surface showings, from which high-grade silver ore has been obtained.

Winter camps were later constructed, and I am informed that the tunnel is being continued throughout the winter, on the recommendation of the engineer representing the interests furnishing the development funds.

Ficklin-Harner. This group comprises seven claims—*High Grade Nos. 1, 2*, and *3, High Grade Extension No. 1, High Grade Extension No. 2, Apex Nos. 1* and *2*—owned by H. Ficklin and W. Harner, of Stewart. The property is situated beyond the *Washington* group at the head of Magee pass. The upper showings are at 5,200 feet elevation. There is now a good trail to the *Washington* camp, beyond which is glacial wash for about half a mile to the glacier, which thence provides a fine horse-trail to the camp.

Volcanic rocks form the predominating formation, with small included belts of sedimentaries, in which, or along which, occur the mineralizations in a quartz-calcite gangue. Two veins have been discovered on the claims.



Dunwell Mines, Ltd.—Mill Engine.

Dunwell Mines, Ltd.—Concentrator.

The upper vein occurs along the contact of a sedimentary belt with the enclosing volcanic rock and can therefore be readily traced along the surface. The vein varies in width from 2 to 6 feet and is badly decomposed on the surface and to any depth as yet obtained in prospecting-work. It strikes in general about east-west (mag.) and dips about 45° north on the surface, where it may be flatter, due to surface pressure. The chief mineralization is pyrite, though some small seams of galena occur, carrying high silver values. On the hanging-wall there appears to be about a foot of pyritized quartz, which carries fair values in gold. On the west end a short crosscut tunnel was driven under the open-cut above, but failed to pick up the vein because of its flat dip. The lower vein, at 4,950 feet elevation, strikes N. 60° E. (mag.) and dips about 45° to the north. It also occurs in a belt of sedimentaries and is from 10 to 12 feet wide. Like the upper vein, it is badly decomposed, with ribs of quartz well mineralized with pyrite and, in places, chalcopyrite. A sample of the quartz disseminated with fine- and medium-grained pyrites from this vein assayed $52 a ton in gold and 3.6 oz. silver to the ton. Similar ore from the upper vein, except that the pyrite was coarser, gave $1.20 in gold and 1 oz. silver to the ton. Altogether this is a rather attractive prospect.

Bear River Section.

This includes all the Bear River valley and tributaries thereto from Stewart to Meziadin lake.

This portion of the district has had a very active and, in general, a very satisfactory mining year, notwithstanding the fact that several companies have been unable to procure the necessary funds for the continuation of development-work. This is not surprising, nor necessarily discouraging, when one considers the number of incorporations that have been made during the past two or three years.

The development and equipment of the *Dunwell* has practically reached the production stage, which will mean much to Stewart and the valley. The *L. & L.* has been developing all season. The *Albany* has started and will operate throughout the winter. The Dalhousie Mining Company's property has improved with prospecting this season and has a very favourable outlook. The *Independence* has recently been examined and financed and is now under development. The *George* copper property in the upper end of the valley continues to improve. The *Red Top*, *Argenta*, *Rufus*, and others, on the upper Bear river, have prospective merit.

Silverado Mines, Ltd.

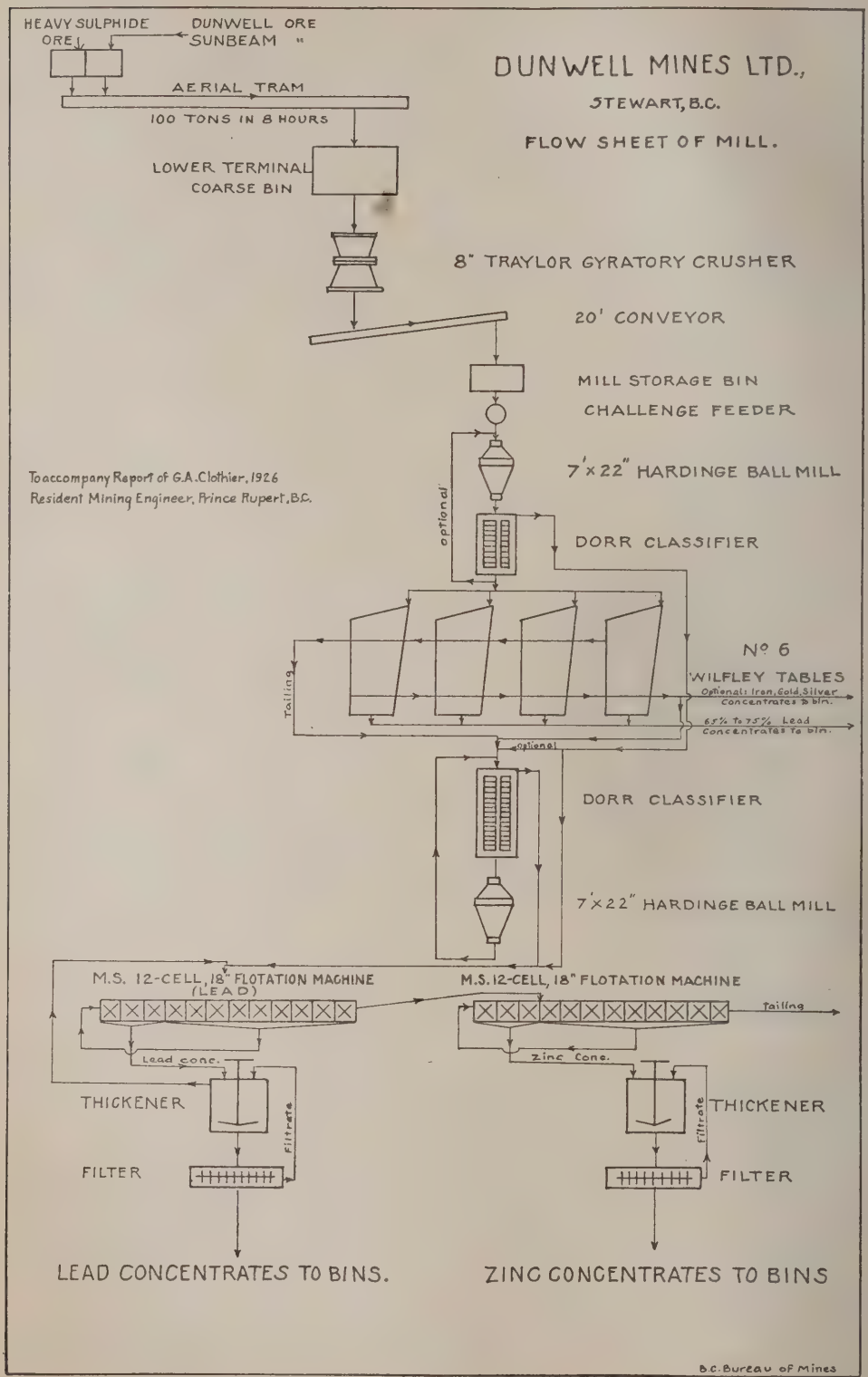
(*See* 1925 Annual Report.) This company was incorporated in 1924 with a capitalization of $500,000, divided into 500,000 shares. The registered office is in the Pemberton Building, Victoria. There are nineteen Crown-granted mineral claims in the company's holdings. Last year a great deal of prospecting and development work was done on the lower showings and very promising results were reported. It was decided to drive a 400-foot tunnel, which would attain about 165 feet depth on the surface showings. About 100 feet of this tunnel was driven up to the end of 1925. This year the drivage was continued until the depletion of funds. The property has been under the supervision of John Stewart.

Dunwell Mines, Ltd.

(*See* previous reports.) The company was incorporated in 1922 and is a specially limited reorganization of the Nass River Lands, Limited, which was incorporated in 1913. The capitalization of the present company was $350,000, divided into 350,000 shares, which was increased in 1925 to $700,000 with 700,000 shares, and further increased in 1926 to $1,000,000 with 1,000,000 shares. The head office of the company is that of the Stewart Land Company, Limited, Pemberton Building, Victoria. The affairs of the company are administered by Robert Stewart, general manager, with Matthew Little engineer in charge at the mine.

The work in 1925 consisted mainly of the surface exploration of the *Sunbeam* claim, containing the northward extension of the *Dunwell* veins. The surface exposures, showing high-grade silver ore, give every reason to expect important ore-bodies. In 1926 a crosscut tunnel was driven about 450 feet, which cut the *Sunbeam* vein at a vertical depth of approximately 200 feet. The vein here was found to be small and low grade. A little drifting was done on it, but did not disclose anything of importance. This work was closed down for the more important work of tramway and concentrator construction.

The ore-bodies in the mine, from the fourth level up, were opened up and made ready for stoping on the completion of the mill. There is well over a year's supply of mill-feed in sight in the mine. Deeper development is proceeding below the No. 4 level by sinking.


HEAVY SULPHIDE ORE
DUNWELL ORE
SUNBEAM "
DUNWELL MINES LTD.,
STEWART, B.C.
FLOW SHEET OF MILL.
AERIAL TRAM
100 TONS IN 8 HOURS
LOWER TERMINAL
COARSE BIN
8" TRAYLOR GYRATORY CRUSHER
20' CONVEYOR
MILL STORAGE BIN
CHALLENGE FEEDER
7'x22" HARDINGE BALL MILL
optional
DORR CLASSIFIER
To accompany Report of G.A. Clothier, 1926
Resident Mining Engineer, Prince Rupert, B.C.
Nº 6
WILFLEY TABLES
Optional: Iron, Gold, Silver Concentrates to bin.
65% to 75% Lead Concentrates to bin.
Tailing
optional
DORR CLASSIFIER
7'x22" HARDINGE BALL MILL
M.S. 12-CELL, 18" FLOTATION MACHINE (LEAD)
M.S. 12-CELL, 18" FLOTATION MACHINE
Tailing
Lead cone.
Zinc Cone.
THICKENER
Filtrate
FILTER
THICKENER
Filtrate
FILTER
LEAD CONCENTRATES TO BINS.
ZINC CONCENTRATES TO BINS
B.C. Bureau of Mines

The aerial tramway from the mine, No. 4 level, to the mill, about a mile in length, has been completed. The concentrator, designed and constructed by L. C. White, of Birch, Hershey & White, is completed and the machinery is being installed as received. It is expected that milling will commence early in the spring of 1927. The mill and new power plant are situated on the flat at the old Portland Canal Mining Company's concentrator, and therefore on the main road about 4 miles from the dock at Stewart.

The flow-sheet of the mill is not complicated and is roughly as follows: The mine-run ore goes to the upper tramway-terminal double-compartment bins, one side for heavy sulphide ore and the other for general milling-ore. From these bins the ore is delivered to the lower tramway-terminal storage-bin at the head of the mill by aerial tramway, having a capacity of 100 tons in eight hours; thence to an 8-inch Traylor gyratory crusher and by conveyor-belt to the mill storage-bin. The ore is then delivered by a Challenge feeder to a 7-foot by 22-inch Hardinge ball-mill in closed circuit with a Dorr classifier, the overflow going to the flotation-cells and the remainder to four No. 6 Wilfley tables. The tables make a 65- to 75-per-cent. lead concentrate and possibly an iron concentrate carrying values in gold and silver. The tailings are reground in a Hardinge ball-mill and go to a 12-cell M.S. flotation-machine, making a lead concentrate, to thickener, to filter to bins. The tailings from the first machine go to another 12-cell machine, making a zinc concentrate.

Two shipments of mine-run ore were made early in the year. The first lot of 98 tons assayed 0.65 oz. gold to the ton, 23.8 oz. silver to the ton, 19 per cent. lead, and 15.9 per cent. zinc; and the second lot of 102 tons assayed 0.55 oz. gold to the ton, 24.8 oz. silver to the ton, 19.6 per cent. lead, and 17 per cent. zinc. It seems quite fitting that the Stewart Bros., who founded the town of Stewart, should "bring in" a mine within a short distance of it.

Victoria Mines, Ltd.

(*See* 1925 Annual Report.) This company was incorporated in 1924 with a capitalization of $500,000, divided into 500,000 shares, with its registered office in the Winch Building, Victoria. A little more development was done in 1926 by way of extending the crosscut tunnel, which has for its objective the cutting to the northward extension of the *Dunwell* vein, which has been traced up to the line between the two properties. The work has not yet succeeded in finding the vein.

L. & L. Glacier Creek Mines, Ltd.

(*See* 1925 Annual Report for sketch-map, and previous reports.) This company was incorporated in 1924 with a capitalization of $250,000, divided into 1,000,000 shares; the registered office is at 414 Pender Street West, Vancouver. Application has now been made to change the name to L. & L. Consolidated Mines, Limited. The company's holdings consist of three claims at the head of the North fork of Glacier creek. Last year the upper tunnel was extended and a raise driven to it from the No. 2 tunnel, a distance of 70 feet, in ore the greater part of the way. Some stoping was done above the upper tunnel and 57 tons of ore shipped, from which the smelter returns were $112 a ton, mainly in silver values. Difficult transportation conditions made shipping too expensive and consequently it was decided to go ahead with development in 1926 instead of trying to ship. A tunnel, No. 3, was started just above the glacier, 100 feet vertically lower than the No. 2. The first 30 feet is a crosscut to a cross-vein, which is then drifted on for 70 feet to the main vein, which has then been drifted on for 200 feet, making about 300 feet of underground work for the summer season.

It is estimated that the face of the lower tunnel is about vertically under the mouth of the No. 2 tunnel. The last 15 feet in No. 3 tunnel shows signs of ore, which may be the downward extension of the short ore-shoot at the mouth of No. 2 tunnel. No shipping-ore was found in the cross-vein. The work has been under the supervision of H. Thomey.

Further assistance toward building the trail to this property was obtained, but unfortunately, due to a misunderstanding on account of a change of road foreman, the money was expended on the lower end of the trail, where, though necessary, it was not so urgent as the requirements of the upper end.

Rush Columbia Mines, Ltd.

This company was incorporated last year with a capitalization of $1,500,000, divided into an equal number of shares, with its registered office in the Winch Building, Victoria. The company's property includes nine claims adjoining the *L. & L.* group and served by the same trail. The stock became involved in litigation and consequently nothing has been done on the property. This has now been settled and some mining may be done.

Allenby Mining Co., Ltd.

This company was incorporated in 1925 with a capitalization of $900,000, divided into 900,000 shares. The property consists of three claims situated on the South Fork of Glacier creek—*Albany*, *Raven*, and *Lucky Boy*—owned for a number of years by J. Watkins, of Stewart. Last year a good cabin was built on the trail at 1,700 feet elevation and therefore accessible with pack or saddle horses.

Some open-cutting was done at and above the trail and below the trail down to the South fork of Glacier creek. One cut at the cabin shows a foot or more of solid pyrite, carrying some galena and a little zinc-blende. A sample of this assayed $4 in gold to the ton, 10 oz. silver to the ton, 17 per cent. lead, and 4 per cent. zinc. About 25 feet below this a tunnel was driven 15 feet to the vein; then 65 feet on it, showing it to be about 2 feet in width of brecciated slightly mineralized quartz and country-rock. The bunch of solid sulphides above does not show in the tunnel.

Below this, to the creek, are several cuts which do not show anything of importance. On the north bank of the creek, just below the falls, is a cropping of a vein about 6 feet or more in width, heavily mineralized with pyrite, zinc-blende, and galena. A few pieces of this were assayed to obtain general values. The assay, which is not to be considered an average, gave a trace of gold, 7.2 oz. silver to the ton, 24 per cent. lead, and 34 per cent. zinc. A short tunnel has been driven on this showing and it looks well worth further work.

There are several other showings which, in the absence of any one familiar with the property, I did not see. However, from my brief examination I judge the property has considerable merit.

The company has an aggressive directorate, which appointed E. A. Haggen as consulting engineer. Company affairs were straightened out and work resumed on the showings late in the fall of 1926. A contract was let for 200 feet of tunnel to be driven during the winter under the supervision of Angus McLeod.

Goldie.

This group is comprised of six claims, situated above the Emperor Mines ground and on the summit between Glacier and Bitter creeks. The claims are owned by Wm. Tooth, of Stewart, and associates and reached by way of the Emperor Mines trail. The general rock formation is sedimentary, intruded by many dykes, striking in a north-south direction. In the fractured slates are small quartz veins running in all directions and sometimes mineralized with pyrite, galena, and zinc. The showing is a slate-belt, probably 30 feet wide, lying between two dykes. Open-cuts along up the side-hill show small bunches and veinlets of mineral and mineralized quartz, but not enough to make ore. At 4,000 feet elevation another dyke cuts diagonally across the two dykes and includes slate. Subsequent shearing along the argillite-belt has broken the cross-dyke, so that the vein carries on through it. At this particular place galena was deposited, filling the vein for the width of the cross-dyke, about 18 feet. No mineralization of importance has been found on either side of it. In following the vein through the dyke 18 sacks of galena ore was sorted out and shipped, giving returns of 80 per cent. lead and 85 oz. silver to the ton.

The cut is so close to the surface that there is no stoping-ground above, and on account of the gently sloping nature of the ground any depth would have to be gained by sinking. As the vein and mineralization is only a few inches thick the outlook is not promising.

Emperor Mines, Ltd.

(*See* 1925 Annual Report.) This company was incorporated late in 1924 with a capitalization of $1,500,000, divided into 1,500,000 shares. The registered office is in the Standard Bank Building, Vancouver. No mining has been done since the big vein was cut early last winter. The mineralization consists mainly of pyrite in a brecciated quartz and greyish medium-grained rock about 20 feet wide. An independent sampling is said to have averaged $12 a ton, or about a border-line milling-ore. A small vein showing some pyritization was encountered about 200 feet from the big vein. Short drifts were run each way; in the north drift the vein opened up to about 5 feet in width of promising-looking mineralization.

It is one of the best-equipped small properties in the country and is just at the interesting stage where all dead-work has been done and the exploration of the vein can be proceeded with. An average of $12 a ton across 20 feet would seem to be sufficiently encouraging to attract development capital.

Ruth and Francis.

There are four claims in this group, owned by Jas. Nesbitt and Andy Archie, of Stewart. The claims are *Ruth*, *Francis*, *Copper King*, and *Little Johnny*, situated on the North fork of Glacier creek, about 4 miles from the main wagon-road at Glacier Creek bridge. There is a horse-trail from the road

through to the *Sunshine* group above this, which has been improved to a first-class wide trail with wagon-road grade as far as the Emperor Mines, Limited. It is the intention to continue the improvement of the trail each year. The camp is at 3,450 feet elevation. The general formation is the Bitter Creek argillites.

On the *Ruth* claim a tunnel has been driven 61 feet, following a small vein of mixed quartz and slate. The first 31 feet is on a bearing N. 40° E. (mag.) and from there the vein trends to the left on a N. 10° E. strike to the face. The ore is on the hanging-wall of the vein all the way. At the bend in the vein there is a length of 9 feet along the wall of solid antimonial lead, assaying: Gold, 40 cents a ton; silver, 31.6 oz. to the ton; lead, 15 per cent.; zinc, 18 per cent.; and antimony, 8.3 per cent. The ore has been broken into only a foot or two along the 9-foot exposure and it would be interesting to know whether the hanging-wall bends here or continues on the strike of the vein indicated in the first 30 feet of tunnel. Holes have been put in along the right side of the tunnel, showing ore on that side to the face which is of mixed quartz and slate.

About 200 feet farther south on the vein, and about 60 feet vertically lower, another tunnel is being driven on the vein and is now in about 80 feet, which has encountered some bunches of nice ore. It has not yet reached a cross-dyke and accompanying vein, showing on the surface about 25 feet south of the mouth of the upper tunnel.

I think the owners would be well advised to do some work in the solid ore in the upper tunnel and prove whether it is worth while drifting far in the lower tunnel.

Ore Mountain Mining Co., Ltd.

(*See* 1925 Annual Report.) This company was incorporated in December, 1924, with a capitalization of $1,000,000, divided into 1,000,000 shares; the registered office is in the Pemberton Building, Victoria. The holdings consist of six claims, situated north of the mouth of Bitter creek, on the east side of Bear river. They extend from the valley up to 4,750 feet elevation. In the fall of 1925 some work was done on a small galena-bearing vein high up on the mountain. A tunnel was driven about 60 feet, demonstrating that the vein split up and disappeared. Winter work was then started on a crosscut tunnel near the camp. The first 30 feet is in greenstone; then a belt of low-grade pyritized siliceous argillite 20 feet wide was cut, the remainder of the tunnel being in barren argillite. As no further depth could be obtained here in drifting on the mineralized belt, it was decided to drive another crosscut tunnel from the west side of the hill at an additional depth of 125 feet. It is estimated that it will require 360 feet of tunnel to reach the mineral-belt cut in the first tunnel. At the beginning of October 170 feet had been driven in greenstone.

The grade of ore cut in the upper tunnel and the none too encouraging surface showings make the driving of such a length of tunnel a rather doubtful and hazardous undertaking. The work is being well and economically done with the aid and supervision of George Young and Henry Unwin, the original owners of the property.

Little Wonder.

There are eight claims in this group, owned by Paul Suppelca and Herb Hunter, of Stewart. The claims are situated on Blackcurrant creek, south of Mosquito creek, and are reached at present from the Ore Mountain Company's camp by a 2-mile foot-trail along the side-hill. The predominating rock formation is greenstone, intruded by many dykes, and including belts of argillite, within or near which are mineralizations of zinc-blende, pyrite, and galena in a quartz-calcite gangue. The general trend of the argillite-belts is east-west, but in places they swing to almost north-south.

The argillite-belt carrying the showings is from 10 to 15 feet wide, overlain on the hanging-wall side by a 10-foot feldspar dyke, above which are more indications of mineralization. At one place, at 3,400 feet elevation, there is a 2-foot vein of mineralized quartz and calcite on the contact of the argillite and volcanics, showing 3 or 4 inches of solid sulphides next to the volcanic rock. The showings indicate that the area is worth while prospecting along the argillite-volcanic contact.

Dalhousie Mining Co., Ltd.

This company was incorporated in 1925 with a capital of $1,000,000, divided into 1,000,000 shares, with registered office in the Permanent Loan Building, Victoria. The company's holdings include the *Dalhousie* and *Rock of Ages* groups, situated on the west side of Bear river, opposite Bitter creek. There are eight claims in the *Dalhousie* group, owned by Geo. Cameron, of Stewart, and Al. Pratt, while in the *Rock of Ages* group there are eight claims, owned by D. A. Munro, of Stewart. Nothing was done last year except the partial construction of a very difficult trail from the valley to the showings. This year the trail was completed and a good camp built at 2,700 feet elevation.

The general rock formation is greenstone (McConnell's Bear River formation) intruded by many light-grey, fine-grained dykes, striking into the hill at about N. 45° W. On the *Dalhousie* group there are two "iron veins" and a "copper vein," on each of which a little work has been done.

The No. 1 iron vein strikes into the hill at S. 80° W. and dips from 50° to 55° to the south. Two open-cuts have been put across this vein at 2,575 and 2,650 feet elevations respectively. A tunnel has been started at the lower cut on the hanging-wall side. Below the lower cut the bluffs are very precipitous and the vein has not been traced any lower. At the lower cut the mineralization shows a width of 20 feet or more and appears to run in bands diagonally across the vein. The mineralization is a heavy pyrite, with which is associated some chalcopyrite, in a siliceous gangue. Samples across from 8 to 15 feet in width gave $12 a ton in gold, silver, and copper values, which would make fair milling-ore. The upper cut shows a vein-width of 9 feet of well-pyritized siliceous gangue that would concentrate probably 4 or 5 into 1.

The No. 2 iron vein strikes N. 40° E. and stands almost perpendicularly. An open-cut on it in the big canyon shows some pyrite, but better ore was found just above the camp, where the vein runs out of the hill. I understand that a little later work at this point showed better ore. Considerable time was given to surface prospecting and trail-building. Discoveries of good ore were made higher up, which future work may prove important.

On the *Rock of Ages* group, at 4,000 feet elevation, there is an outcrop of siliceous greenstone carrying zinc-blende and galena across a width of at least 20 feet, which will probably prove wider when broken into. It strikes due north-south (mag.) and dips westerly at about 75°. There appears to be considerably more galena on the hanging-wall side. An independent sampling gave $12 a ton across 25 feet in gold, silver, lead, and zinc. This vein is certainly worth opening up. Farther north a cropping of another vein shows native silver, but not enough work has been done to indicate the width or continuity of the showing.

Altogether the season's work has put the property in much better condition for operating and improved its prospective merit. Operations have been under the able direction of George Cameron.

Independence Gold Mining Co., Ltd.

(*See* 1925 Annual Report.) This company was incorporated in 1924 with a capitalization of $1,500,000, divided into 1,500,000 shares; the registered office is at Stewart. The property consists of six claims situated on Goose creek, staked and owned by Sam and Jack Fitzgerald, under whose supervision development-work has been carried on. The equipment consists of a good camp and a small compressor plant. Over 600 feet of tunnel has been driven, supposedly on No. 2 vein, which crops at an elevation of 3,500 feet, or about 500 feet above the tunnel. Ore was encountered in places in the tunnel, the last 80 feet to the face being in a continuous shoot of ore. A crosscut shows the vein to be 16 feet wide, which it is claimed will average $12 a ton. The vein in the present face (October 1st) is about 4½ feet wide. A lot of lateral work has been done in crosscutting, which probably would have been used to better advantage in drifting on the vein. Over 1,000 feet to the north of the tunnel vein are Nos. 3 and 4 veins, on which a little work has been done and which warrant further exploration.

A few hundred feet south of the tunnel another vein, termed the "Bunk-house vein," has been open-cut in two places, exposing a vein-width of 6 feet. The mineralization is identical with the other veins, consisting of pyrite with some galena and zinc-blende in a quartz-calcite-jasper gangue. This is a strong vein showing milling-grade ore and also warrants opening up.

My impression of the property has always been that it will develop an ample tonnage of milling-grade ore to make a concentrating plant a profitable undertaking. In the fall of 1926 a controlling interest in the company was obtained by American interests, who, under the terms of the agreement, will undertake a comprehensive development of the property.

Terminus Mines, Ltd.

(*See* 1924 Annual Report.) This company was incorporated in 1924 with a capitalization of $1,000,000, divided into 1,000,000 shares. The registered office is in Victoria. The holdings consist of six claims, situated on the east side of American creek at 3,400 feet elevation, about 5 miles from the wagon-road. There is a good horse-trail to the property. Briefly, the country-rock is greenstone agglomerate in which there are numerous parallel feldspar dykes. The mineralization occurs on either side of a small dyke, which has been intruded into a shear in one of the feldspar dykes, and consists of pyrite, galena, zinc-blende, some chalcopyrite, and tetrahedrite. A 50-foot shaft has been

sunk on this showing and drifts driven about 40 feet each way from the bottom. Later a cross-cut tunnel 370 feet long was driven, cutting the vein and dyke at 330 feet. A drift was driven 20 feet south on the dyke and a raise put up to the south drift from the bottom of the shaft. There is also a 70-foot drift north from the tunnel showing little mineralization.

The work in 1926 was done by H. Hayward, who drove ahead a little on each of the shaft drifts and the north tunnel drift. Both faces of the shaft drifts are much improved, the south face showing a vein-width of about 4 feet, of which 18 inches is good ore, 4 to 6 inches of high grade, and the remainder heavily oxidized material.

The north drift from the tunnel previously showed only the vein seam, but a little work has exposed about 18 inches of promising-looking vein, consisting mainly of heavily oxidized vein material in which are several stringers of high-grade ore. This face is well worth driving ahead. The comparatively small amount of work done this season has greatly improved the possibilities of the property.

Anaconda.—The *Anaconda Nos. 1, 2,* and *3,* staked in 1924 by B. G. Raymon and partners, are situated north of and probably adjoining the claims of the *Vancouver* group on American creek. The owners claim to have some silver-lead ore showings, but I have not been on the ground.

Vancouver Mines, Ltd.—(*See* 1925 Annual Report.) This company was incorporated in 1925 with a capitalization of $1,000,000, divided into 1,000,000 shares, with the company's registered office in the Vancouver Block, Vancouver. The property comprises twelve claims, nearly surrounding the *Terminus* group. Nothing has been done since incorporation but assessment-work.

George Gold-Copper Mining Co., Ltd.

(*See* 1918–19 Annual Reports.) This company was incorporated in 1925, having a capitalization of 1,500,000 of $1 shares, with its registered office in the Pemberton Building, Victoria. The holdings consist of sixteen mineral claims, situated on the south side of Bear river, 6 miles up from the end of the wagon-road. There is a first-class horse-trail from the wagon-road up the valley and a branch trail to the property. A saddle-horse may be ridden from Stewart to the camp at 2,100 feet elevation, a distance of about 20 miles. The general rock formation is volcanic with few intrusions. The mineralization is pyrite and chalcopyrite in a quartz gangue.

Three veins have been discovered—namely, the "green," "white," and "blue" veins. The "green" vein is the highest on the mountain, at about 4,800 feet elevation, and may prove to be the continuation of the north branch of the "blue" vein. It has not been opened up to any extent, but apparently is from 3 to 5 feet wide, well mineralized with sulphides of iron and copper for a length of 250 feet. The "blue" vein has had a great deal of surface work done on it by way of open-cutting, trenching, and shallow pits, tracing it as a continuous ore-body for about 500 feet going east, where it splits up, the northern vein continuing for another 250 feet and the southern fork for over 100 feet, so far as traced. This vein will average 6.5 feet wide, there being 12 feet of good ore at the juncture of the forks. It dips at 65° S. I judge it will average 4 per cent. copper, besides carrying appreciable gold values and a little silver. It is certainly a splendid surface showing, with a fine opportunity for development by drift-tunnelling at almost any desired depth.

The "white" vein is east of the "blue" vein and below the "green" vein about 200 feet. It has been exposed at intervals by several open-cuts, over a length of nearly 500 feet easterly to the big gulch, from a point about 300 feet east of the "blue" vein. Whether or not it extends through to the "blue" vein has not been determined. This vein has also a fine surface showing of chalcopyrite, several cuts showing a width of vein up to 10 to 12 feet, in which there are from 18 to 40 inches of 12 to 16 per cent. copper ore. Altogether I think the property is one of exceptional merit.

Montreal.

There are eight claims in this group—*Montreal Group Nos. 1, 2, 3, 4, 5, 6, 7,* and *8*—located on the north side of Beaver creek by Jas. Douville, Frank Reva, and H. McHugo, of Stewart. The claims adjoin the *Murdock* on the east and are about 3 miles down the creek from the Bear River divide. There has been a good horse-trail right through to Meziadin lake, but the portion over the summit, where it is underlain by ice, is always unreliable. Also a distance of 2 miles east of the summit, where the trail switches over to the south side of the river, is in bad condition. The owners have a new cabin on the property at 1,800 feet elevation, reached by following up the creek-bed east of Cottonwood camp.

The country-rock is greenstone of the Bear River formation. The lower mineral-showing is about 50 feet below the cabin and consists of a belt, which from its appearance may be quartz porphyry or greywacke, about 50 feet wide in the country-rock. The belt strikes about N. 40° W. and dips about 75° W. In it are small veins and bunches of mineral consisting of zinc-blende and pyrrhotite, with lesser quantities of galena and chalcopyrite. The mineralization would constitute a very small proportion of the whole. On the foot-wall side there is a network of small unmineralized quartz stringers. Two short tunnels have been driven in this belt, one practically on the hanging-wall, in the face of which is a 6-inch vein of mineral paralleling the hanging-wall. The other is about 20 feet from the foot-wall greenstone in the quartz-stringered porphyry. Small bunches of mineral occur, but nothing as well defined as the 6-inch vein in the other tunnel. The mineral itself carries good values, up to $60 a ton, I was informed, but there is not enough of it to be of importance in this location. It is not a very prepossessing showing in itself, but might justify further prospecting along this belt. About 100 yards east of this a small vein of sulphides, zinc-blende, galena, and pyrite, from 1 to 3 or 4 inches wide, has been exposed for a few feet. A little work should be done on it to see if it improves.

West of the first showing, and up the east side of the creek at 1,900 feet elevation, there is a belt or vein-dyke of quartz from 10 to 20 feet wide striking diagonally across the creek-gulch at N. 20° W. Patches of mineral occur in the decomposed rock bordering this dyke. Only a shot or two has been put in and it might be worth while to break into the main quartz-body. This is apparently a good prospecting area.

Other properties in the Bear River section and the year of the Annual Report in which they have been described are as follows: Argenta Mines, Limited, 1925 (*Vetron* and *Comet*, 1920); Bayview Mining Company, Limited, 1925 (*Bayview*, 1922); *Enterprise*, 1925; *Gold Cliff*, 1925; Lakeview Mines, Limited, 1925; *L.L. & H.*, 1920; *Mayflower*, 1925; *M.C.*, 1923; Mimico Mines, Limited, 1925 (*Mimico*, 1922); *Mountain Boy*, 1919; Phoenix Silver Mines, Limited, 1925; Prince John Mining Company, Limited, 1923; Radio Stewart Mines, Limited, 1925; *Red Top*, 1925; Ruby Silver Mines, Limited, 1924; Rufus Silver-Lead Mines, Limited, 1924; *Sunshine*, 1919; *Tyee*, 1921; Union Silver Mines, Limited, 1925; *Windsor*, 1924.

Salmon River Section.*

This section comprises the Salmon River valley and tributaries thereto, above the British Columbia-Alaska boundary-line, at 13 miles up from tide-water. There is a good auto-road from Stewart to the *Premier* and *B.C. Silver* mines, from which trails branch to the different areas and properties.

The year has been an important one in this section. The *B.C. Silver* has been definitely proven; the Sebakwe and District Mines, Limited, has penetrated to the *Premier-B.C. Silver* mineral-belt and found ore, though low grade; the old standby, the *Premier*, has paid its annual $1,600,000 in dividends without much apparent effort; the *Big Missouri* management is seriously considering a concentrator; prospects in the upper valley are improving (such as the *Silver Tip* and *Outland-Silver Bar;* and the *Premier Extension* has been bonded and may get some development. All told, the valley has made very material progress since last year.

Premier Gold Mining Co., Ltd. Incorporated in 1919 with a capitalization of $5,000,000, divided into 5,000,000 shares. The first dividend, amounting to $400,000, was paid in 1921, since which time they have increased to $10,150,000, which includes $1,600,000 paid in 1926. The outstanding feature of the *Premier* operations for the year was the completion early in March of the new 200-ton unit of the mill. This unit, along with the old mill, brings the rated capacity up to 400 tons in twenty-four hours, but for the past few months it has been handling about 430 tons a day. This naturally called for a much greater mine production than last year. The total ore milled amounted to 122,152 tons, an increase of 66,448 tons, or 119 per cent., over 1925 figures. The total concentrates increased from 6,357 tons to 19,997 tons. A different character of concentrate has been made owing, primarily, to the closing-down of the cyanide department. More iron has been picked up in order to keep tailing losses down, and as a result the ratio of concentration has advanced from 11.4 to 16.4. Milling costs have been materially reduced.

* Geology and Ore Deposits of Salmon River District, British Columbia, Memoir 132, by Geo. Hanson and S. J. Schofield.

PREMIER GOLD MG. CO.

PREMIER, B.C.

FLOW SHEET,

PREMIER MILL.

PRIMARY CRUSHING

- Mine Bins 3-100 Ton Bins
- Belt Conveyor-26"-"A" 10 H.P. MOTOR
- Apron Feeder 42" 6 H.P. MOTOR
- Blake Crusher 30"x18" to 4 ins. 50 H.P. MOTOR
- Belt Conveyor 22"-"B" 10 H.P. 350 FT. PER MIN.
- Suspended Magnet
- Grizzly 2 ft wide 4 ft long 1 in. openings use optional
- Belt Conveyor 20" 10 H.P. 350 FT. PER MIN.
- Deflecting Gate feed to tram
- Gyratory Mill Bin
- Conveyor Belt "C" 20" to Tram Bins 10 H.P. 350 FT. PER MIN.
- Belt Feeder 20" 5 H.P. MOTOR

FINE CRUSHING TO 1 IN

- Gyratory Crusher McCully. 6" to 1" 60 H.P. MOTOR
- Bucket Elevator 14"
- Belt Conveyor 20" 5 H.P. MOTOR 250 FT. PER MIN
- Marcy Mill Bin
- Hardinge Mill Bin
- Belt Feeder 20" 5 H.P. 6 FT PER MIN
- Soda & Zanthate Tank 5 ft. diam x 10' 24 HRS SUPPLY
- Water Supply Tank constant head using mine water
- Mechanical Oil Feeder
- Hardinge Ball Mill 6'x36" 150 H.P. MOTOR SHORT CHAIN DRIVE
- Dorr Classifier 6x20 model "D" 5 H.P. 20 MESH OVERFLOW

#2 MILL FINE GRINDING & TABLE CONC.

- Allen Sand Cone 4'6" TYPE 4-0
- Wilfley Sand Pump 2" 10 H.P. MOTOR
- Premier Sand Distributor
- 8 Deister Plato Sand Tables
- Wilfley Sand Pump 2" 5 H.P.
- Wilfley Sand Pump 2" 10 H.P.
- Surge Box 4'
- Allen Sand Cone 4'6" type 4-0
- Allen Sand Cone 4'6" type 4-0
- Wilfley Sand Pump 10 H.P.
- Wilfley Sand Pump 20 H.P.

#2 MILL FLOTATION 200 H.P. MOTOR

- A.C. Tube Mill 5'x8' 75 H.P. DIRECT CONNECTED
- Wilfley Sand Pump 2" 10 H.P.
- Mechanical Oil Feeder
- Wilfley Sand Pump 4" 20 H.P.
- 2 M.S. Sub A. Flotation Mach. 75 H.P. PER MACHINE
- Wilfley Sand Pump 2" 5 H.P.
- Wilfley Sand Pump 2" 5 H.P.
- Wilfley Sand Pump 2" 5 H.P.
- Wilfley Sand Pump 4" 20 H.P.
- Conveyor Belt Feeder 18" 25 FT. PER MIN
- 64½ Marcy Ball Mill BELT DRIVEN
- Dorr Classifier 4' model "C"
- Mechanical Oil Feeder
- Krogh Tailing Pump 3" belt driven
- Allen Sand Cone 4'6" type 4-0
- Premier Sand Distributor

#1 MILL FINE GRINDING & TABLE CONC.

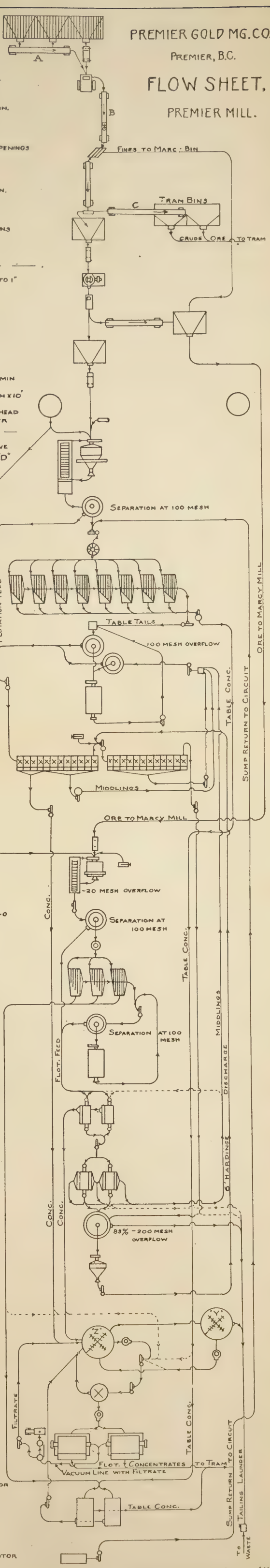
- 3 Wilfley Sand Tables #6
- Wilfley Sand Pump 4" 20 H.P. MOTOR
- Allen Sand Cone 4'6" type 4-0
- Tube Mill 4'x8' belt driven

#1 MILL FLOTATION TAILS REGRINDING

- 2-K&K Flotation Machines 12' single spitz
- Krogh Tailing Pump 3" belt driven
- 2-K&K. Flotation Machines 12' double spitz 25 H.P. #1 machine
- Allen Sand Cone 8' type 4-0
- Hardinge Ball Mill 6'x16" 50 H.P. MOTOR SHORT CHAIN DRIVE
- Wilfley Sand Pump 2" 10 H.P.

THICKENING & FILTERING CONCENTRATES

- Dorr Thickener "Z" 30'
- Dorrco Pump No 4
- Dorr Thickener "Y" 30'
- Dorrco Pump No 4
- Wilfley Sand Pump 3" 25 H.P. MOTOR
- Wilfley Sand Pump 2" 10 H.P. MOTOR
- Dorr Thickener 18' 5 H.P. MOTOR with 40' mechanism
- Dorrco Pump No 4
- Oliver Filter 5'4" x 4' face
- Oliver Filter 5'4" x 6' face
- Vacuum Pumps. Moisture Traps
- Dewatering Pump
- Krogh Tailing Pump 3" 10 H.P. MOTOR
- 2 Table Conc. Bins 4'x4'x12'
- Automatic Tail Sampler 1/6 H.P. MOTOR
- Sump
- Krogh Tailing Pump 4" 10 H.P. MOTOR ----- ALTERNATIVES.



With Report of G.A. Clothier, Resident Mining Engineer Prince Rupert B.C. Bureau of Mines

Shipping-ore sent to Tacoma and Granby was maintained at practically the same tonnage as 1925. The total ore mined in 1926 amounted to 230,987 tons, an increase of 62,430 tons, or 37 per cent., over last year. The grade of the ore remained about the same. There was produced during the year: Gold, 122,228 oz.; silver, 2,920,492 oz.; increases of 3,780 oz. and 556,936 oz. respectively over last year and the greatest production since the company's record output in 1922.

Underground mining had to be stepped up to meet the requirements of the new mill and development-work was proportionately speeded up to keep pace with this programme. During the year 8,691 feet of drifts and raises and 9,409 feet of diamond-drilling were done, bringing the total underground work up to 7.89 miles and the diamond-drilling to 14.11 miles. With this increased tonnage, together with improved mining methods, costs have been materially reduced and lower-grade ore can now be handled.

Diamond-drilling and development-work have blocked out considerable new tonnage and the total broken and unbroken reserves are practically the same as at the end of last year, in spite of the fact that over 230,000 tons of ore was mined.

The new power-house units were completed early in the year and an additional 360-horse-power Fairbanks-Morse Diesel engine, direct-connected to a 300-k.v.a. generator, was installed. This brings the total horse-power in engines up to 1,980. In addition to this there are available during the wet season 1,096 horse-power from water-wheels. The operation of these power units has been very satisfactory and remarkably low costs are obtained from them. All oil used in the Diesel engines, as well as fuel-oil for heating purposes, is brought up over the tramway from the dock, making a very low transportation cost.

The tramway operated 90 per cent. of the total time, travelling 49,400 miles. It hauled 137,047 tons of ore and concentrates and 6,389 tons of freight, including oil. This performance indicates that aerial transportation in rough and snowy countries is much cheaper and more satisfactory than by rail.

New construction was limited to the building of a steel-sharpening shed, 36 by 40 feet, at Camp 4. A storage-shed, 100 by 50 feet, and a new concentrate-bunker at the tramway-head were constructed, enabling the shipping of concentrates in bulk instead of in sacks as heretofore.

Altogether the *Premier* has had a very successful year, the output has been increased, costs cut, and the resultant net operating profits increased, evidencing the efficiency of the operating organization.

The staff personnel remains the same: Dale L. Pitt, general manager; Bert F. Smith, assistant manager; Hector McDonald, mine superintendent; and W. Asselstine, concentrator superintendent.

B.C. Silver Mines, Ltd. (*See* 1925 Annual Report.) Incorporated in 1919 with a capitalization of $1,500,000, divided into 1,500,000 shares, with its registered office in the Pacific Building, Vancouver. The Company's holdings consist of two groups of claims, one group adjoining the *Premier* ground on the north and the other group adjoining it on the south. The north group, containing the north-easterly extension of the *Premier* ore-zone, has received all the development-work.

Early in 1925 ore was struck in a diamond-drill hole from the No. 3 (lower) level, at about 1,500 feet along the ore-zone from the *Premier* line. The No. 3 level was then driven to this ore-body and on it for 200 feet. Further diamond-drilling indicated another ore-body about 100 feet from the first one.

This year the underground work consisted of 1,427 feet of drifting, 1,492 feet of crosscutting, 1,332 feet of diamond-drilling, 290 feet of raising, and 130 feet of sinking. The first (or "C") ore-body was drifted on another 100 feet, making its total length 300 feet. The average width exceeds the width of the drift. The general run of the ore is good milling grade, with wide streaks of high-grade in it.

About 80 feet north-west of "C" another parallel ore-body, called "D," was encountered by diamond-drilling and this year drifted on for 300 feet, proving over 5 feet in width of good-grade milling-ore. Ore-bodies "C" and "D" appear to come together at the north end, forming a body of ore 60 feet in width.

A 2-compartment raise was put through from No. 3 to No. 2 level, a distance of 265 feet. A 2-compartment shaft is being sunk from No. 3 level in "C" ore-body and at 160 feet No. 4 level will be driven. The shaft is now down 130 feet. It is from this work that the major portion of the ore shipped this year has been taken.

Diamond-drilling has demonstrated that the vein extends back 450 feet toward the *Premier*, which opened up ore at that level near the *B.C. Silver* boundary. It would therefore seem reasonable to expect similar ore-bodies in the intervening 1,000 feet.

Surface improvements for the year include a 1,050-cubic-foot compressor direct-connected to a 180-horse-power oil-engine; an oil-storage tank of 50,000 gallons capacity; electric locomotive for underground haulage; compressed-air hoist; a 2-cylinder single drum for shaft from No. 3 level; an enlarged bunk-house, assay office, and central heating plant.

The staff remains the same: C. A. Banks, general manager; C. B. North, superintendent; and H. A. Gould, secretary.

Sebakwe and District Mines, Ltd.

This is an English company, registered in the Province in February, 1926, with an authorized capital of £200,000. Its head office in the Province is 612 Pacific Building, Vancouver. It acquired the old Bush property from the National Silver Mines, Limited, for a share consideration, for the purpose of prospecting it for the extension of the *Premier-B.C. Silver* ore-zone. Early in the year a camp and compressor plant were installed and work started on a crosscut tunnel. Early in December this had been driven 1,000 feet, encountering a vein at this distance from the portal. The average values are as yet not commercial, but the vein is strong and looks promising. The company is under the management of C. A. Banks, with C. B. North as superintendent.

Extenuate Gold Mines, Ltd.

This is the new name of the old Portland Canal Goldfields Syndicate, Limited, incorporated in 1924 with a share capitalization of $100,000, divided into 400,000 shares at 25 cents each. Class "A" consisted of 300,000 shares of preferred stock and Class "B" 100,000 shares of common stock. Notices were sent calling for a meeting of the common- and preferred-stock shareholders on June 7th, 1926, to convert all preferred shares to common shares. The property of the new company consists of the *Extenuate* group of eight claims—*X-10-U-8*, *X-10-U-8 Nos. 2*, *3*, *4*, *5*, and *6*, *Three*, and *Extra*—situated on Slate mountain and adjoining the Bush Mines on the north. It is about 2 miles north from the *Premier* ore-zone, which strikes in a north-easterly direction; consequently the prospectus statement that "the property is in close proximity to and on a line with the *Premier*" is misleading, in that it gives the public a wrong impression of its position.

Comparatively little work has been done on the property since the incorporation of the company in 1924. About 30 feet of tunnel was driven that season and there has been only a man or two on the claims each season since. Late this fall a camp was constructed and an outfit taken in for winter work.

Though the ore is very low grade, there is always the possibility of developing a sufficient tonnage of milling-ore to make it a commercial undertaking.

Chief Metals Co.

This is an extra-provincial company with an authorized capital of $125,000 and registered in the Province in 1924, with its registered office in Stewart. The stock of the company is held mainly in Seattle. The company holdings consist of the *Start* group of four claims—*Start Nos. 1*, *2*, *3*, and *4*—situated on the west slope of the north end of Slate mountain. There is a branch trail to the camp from the *Big Missouri* trail, on the east side of Silver lake. Emil Davis, who is in charge of the work, states that about 190 feet of drift-tunnel has been driven on a vein from 4 to 6 feet wide, mineralized with galena and zinc-blende and of good milling grade.

Big Missouri Mining Co., Ltd.

In July, 1925, the Standard Mining Corporation bonded the *Big Missouri* property from Dan Lindeborg, the original staker and owner. This is an extra-provincial company with an authorized capital of $250,000, fully paid, and registered in the Province in September, 1925. The Big Missouri Mining Company, Limited, was then incorporated with an authorized capital of $5,000,000, fully paid, and registered in the Province in December, with its office at 626 Pender Street West, Vancouver, and took over the *Big Missouri* bond from the Standard Mining Corporation. Work was started under the supervision of Pat Daly, who had been instrumental in interesting the corporation in the property. Later the development of the property was placed under the able direction of H. Townsend, mining engineer, under whose instructions considerable ore was blocked out underground and a great deal of surface prospecting done by means of open-cuts and shallow pits, resulting in the location of several new ore-bodies.

Since October 1st, 1926, Mr. McVichie, a mining engineer of Salt Lake City, has had charge of development-work and has confined his efforts to blocking out ore. His objective is to put

sufficient ore in sight by spring to justify the construction of a 100-ton concentrator. There is no doubt that considerable success has already been met with in the development of ore and that the known ore-showings awaiting development give the property great prospective importance.

Silver Tip Mining Co., Ltd. (*See* 1925 Annual Report.) Incorporated in 1925 with a capitalization of $1,000,000, divided into 1,000,000 shares, with its registered office at 323 Sayward Building, Victoria. The *Silver Tip* group of five mineral claims—*Bella Coola, Good Hope, May P.J., Silver Leaf*, and *Lady Bird No. 2*—on Silver creek, in the upper Salmon valley, constitutes the company's holdings. Last season a great deal of surface prospecting was done and a crosscut tunnel driven 30 feet toward cutting the very promising-looking vein on Porphyry creek, on the *May P.J.* claim. This season the same commendable practice of surface prospecting was continued, resulting in the discovery of a strong quartz vein striking north-south and two smaller veins striking east-west.

The farthest south of the east-west veins, named the "No. 1 Clegg," shows some fine high-grade ore on the surface. Early this spring a tunnel was started toward the vein from its north side. When in 45 feet a crosscut was run to the vein a distance of 33 feet, cutting a fairly well-mineralized vein averaging about 50 oz. silver across the face. The main tunnel was then continued toward the vein a total distance of 115 feet. The face had just encountered rose quartz, the same as on the surface, when work had to be closed for the season. This is a promising showing and, if I may offer a suggestion, the vein should be now drifted on until its intersection with the big north-south quartz vein is reached.

About 300 feet north of the "No. 1 Clegg" another vein was found on the surface ("No. 2 Clegg") and about 20 feet of tunnel driven on it. The vein widens from a few inches on the surface to 18 inches in the bottom of the tunnel and shows seams of good ore worth further attention later. Another east-west vein ("No. 3 Clegg") 75 feet north of "No. 2 Clegg" was not worked this year.

The big quartz vein is heavily overburdened with glacial wash, but was stripped and open-cut in three places this season. The biggest cut is opposite the "No. 2 Clegg" vein and here shows mineralization across 16 feet which is said to assay 18 oz. silver. About 200 feet north of this, near the end line of the *Bella Coola*, another cut exposes the same vein very sparsely mineralized. While the owners of the *Sunset No. 1* above opened up a showing of ore from which high silver values were obtained, it is hard to decide whether it is the same vein or not.

The crosscut tunnel (in 30 feet) on the *May P.J.* was extended to 232 feet, where weather conditions necessitated quitting. It is estimated that another 20 feet will encounter the Porphyry Creek vein.

The season's work was well carried out by Jack Clegg, who was in charge, and has materially improved the favourable outlook of the property. Both pieces of work, the "No. 1 Clegg" tunnel and the *May P.J.* crosscut tunnel, are at a very interesting stage and should by all means be continued.

Sunset. This group consists of five claims—*Sunset Nos. 1, 2*, and *3, Jitney Fraction*, and *Sun Fraction*—situated on the south-west slope of Dilworth mountain and owned by W. Hobill, of Stewart, and partners. The group was bonded in 1919 by the Salmon River Silver Mines, Limited, but nothing was done toward development and the company was struck off the register in July, 1923, the claims reverting to the owners.

This year a showing of ore was opened up on the *Sunset No. 1* claim about 100 feet from the north end line of the *Bella Coola* claim of the Silver Tip Mining Company, Limited, property. The vein is about 2 feet wide and appears to be in a fracture diagonally across a belt contained between two dykes. If such is the case it would not be more than 20 feet in length and therefore not of great importance. The ore is good grade, assaying $90 in gold and silver. As nearly as I could judge, the only relation it has to the north-south vein on the *Bella Coola* is that it lies in the same belt, but the *Bella Coola* fracture is parallel with the dykes and therefore more continuous. The swinging of the dykes to the left on the *Sunset No. 1* cuts off the *Bella Coola* vein. It might be as well to look for other mineralized cross-fractures in the same belt.

Silver Crest Mines, Ltd. (*See* 1925 Annual Report.) Incorporated in 1919 with a capitalization of $500,000, divided into 2,000,000 shares at 25 cents each. The holdings consist of the *Silver Hill* group of eleven Crown-granted mineral claims, situated on the south-east slope of Mount Dilworth, adjoining the *Silver Tip* on the north. The rock formation may be briefly described as being slates, on the upper portion of the claims,

overlying volcanic tuffs and quartz porphyries which are exposed on the lower end of the property, the whole intruded by numerous dykes of all ages and types, some of which are mineralized and some are not. The area is termed by Hanson the "Belt of Dykes."

The minerals are zinc-blende, galena, chalcopyrite, and silver sulphides, the main values being in silver. The minerals occur by themselves in small discontinued stringers or in small quartz stringers, in some places cutting across the containing dyke and in other cases paralleling the wall of the dyke. Numerous open-cuts have been put in where the mineralization shows on the surface.

A tunnel has been driven nearly 300 feet, obtaining a depth of about 80 feet under the most promising of the surface exposures, but the mineralization was disappointing. In driving this tunnel by contract last winter some ore was encountered. A sample submitted by the contractors gave high values in gold and silver, but subsequent work proved that the strike was unimportant.

The work done during the summer consisted of a crosscut started from a point about 100 feet in from the portal of the tunnel and driven to cut a dyke showing some small seams of ore on the surface. I have no information as to the result of this work.

Northland Mining Co., Ltd.

(*See* 1925 Annual Report.) Incorporated in 1925 with a capitalization of $1,500,000, divided into 1,500,000 shares. Its registered office is in the Dominion Bank Building, Vancouver. The company acquired the *Troy* group of nine claims, situated on the east side of the north end of Salmon River glacier. They are reached by a rather poor horse-trail from the *Forty Nine*. This spring about 700 feet of diamond-drilling was done under the direction of A. E. Haggen, the company's consulting engineer. The findings of this work did not prove at all encouraging and operations ceased. I am informed that the property has been returned to the original owners.

The company has now taken on the *Bank* group of nine claims, adjoining the *Forty Nine* on the north, and promoting this group under the name of the "Forty Nine Extension." I have not examined the property and have no information as to the mineral-showings on it. It will be examined as early in the spring as possible.

Outland Silver Bar Mines, Ltd.

Incorporated in 1920 with a capitalization of $500,000, divided into 500,000 shares, its registered office being in the Bank of Nova Scotia Building, Vancouver. The company's holdings consist of nine claims and a fraction, situated on the west side of Salmon River glacier just south of the West fork. This group was staked in 1919 by E. H. Bartholf and the company organized by him and F. C. Outland. In 1922 C. L. Hibbard acquired Mr. Bartholf's interest and the property has since been developed by Messrs. Hibbard and Outland, the latter's address being 607 Lowman Building, Seattle, Wash.

The ore occurrences appear in what is termed by Hanson the "Belt of Dykes," the general rock formation being sedimentary. So far as could be seen in a snow-storm, the mineralization here, consisting of a fine-grained galena, zinc-blende, and pyrite, and probably grey copper, occurs in a wide siliceous belt heavily impregnated with pyrite. A short tunnel cutting under the pyritized cropping or capping shows across its face bands of fine-grained galena and zinc-blende, assaying, it is stated, up to $60 a ton. What impressed me was the indefinite width of the mineralization, as apparently the ore extends into both sides of the tunnel. Similar ore is exposed 100 feet vertically lower and I think a little prospecting would locate it at the foot of the bluffs at the edge of the glacier at 3,100 feet elevation, which is about 300 feet below the upper showing.

I am sorry that weather conditions did not permit of a more thorough examination, as there are higher showings from which smelter-test shipments of a few tons have been made, assaying up to $164 a ton. The showings seen certainly justify the intention of the company to install a small compressor plant in the spring and proceed with a more extensive plan of development.

Munro.

This group of seven claims—*Munro, Munro Nos. 1, 2, 3, Big Chief Nos. 1, 2,* and *3*—is situated on the west side of the Salmon River glacier about a mile below the *Outland-Silver Bar* property. It is also reached by crossing the glacier from the foot of the opposite mountain, under the *Hercules* property. The route from the toe of the glacier is becoming more uncertain each year, as the glacier recedes and consequently becomes more broken up. The claims were staked in 1921 and owned by J. E. Munro, Pat McBride, and A. N. McDonald, of Stewart. The general country-rock is sedimentary, dipping flatly to the west.

The mineralization consists of galena and grey copper, carrying high silver values in bedded quartz veins of a few inches in width. There are two veins on the property; the upper one, being under snow at the time, I did not see. Considerable work has been done on the lower one, which lies at 2,350 feet elevation, or about 100 feet above and paralleling the glacier. It lies almost horizontally and has been exposed by stripping and two tunnels. The mineralization, where found, is high grade, but too meagre and uncertain to be of much prospective value.

Premier Extension Gold Mining Co. This is an extra-provincial company incorporated at Ottawa and registered in the Province in 1923, with its office in the Winch Building, Vancouver. It has an authorized capital of $4,000,000, fully paid up. The company's holdings consist of the *Vancouver* group of ten claims and the *Woodbine*, *Woodbine Fraction*, and *Kitchener*, acquired from H. McGuire, of Stewart. The claims are situated on the west side of Cascade creek and adjoin the Premier Gold Mining Company's property on the west. Considerable work has been done on the property during the past two or three seasons. (*See* short report under Alaska Canadian Consolidated Gold Mines, Limited, 1925 Annual Report.) I am informed that the holdings have now been bonded by Calgary interests, who plan an extensive development-work in the spring.

Other properties in the Salmon River section that have been reported on and the year of such report are as follows: B.C. Bonanza Mines, Limited, 1925; *Boundary*, 1918; Eldorado Gold Mines Consolidated, Limited, 1925; Forty Nine Mining Company, Limited, 1920; *Glacier*, 1920; Hercules Mines, Limited, 1920; Hollywood Mines, Limited, 1925; Indian Mines Corporation, Limited, 1923 and 1924; *Mineral Basin*, 1925; Mineral Hill Mines, Limited, 1922; *Pay Roll*, 1918; *Unicorn*, 1925; White Heather Mines, Limited, 1925; *Yellowstone*, 1923.

Unuk River Section.

The reader is referred to the 1920 Minister of Mines' Report for a short article on this section. I have not heard of any prospecting in that area during 1926. Though geological conditions and therefore mineral potentialities are identical with the Salmon and Bear River valleys, lack of transportation is prohibitive so far as prospecting is concerned.

STIKINE AND LIARD MINING DIVISIONS.

These two Divisions comprise the northern portion of the Province, except the Atlin Division, and have an area of about 70,000 square miles.

The Stikine Division is the drainage area of the Stikine river, which empties into the Pacific ocean near Wrangell, Alaska. The Liard Division is the drainage area of the Liard river, which flows into the Mackenzie river at Fort Simpson, and therefore lies on the Arctic slope. Both the areas are reached by boat up the Stikine river from Wrangell to Telegraph Creek, the head of navigation. From Telegraph Creek to Dease lake a good truck-road is being completed and the distance of 75 miles can now be made in seven to ten hours. From Dease Lake is a waterway to the north and pack-trails to the interior.

This season has been the most active for many years, but freighting charges are a very serious handicap yet for the heavy equipments that are now necessary for profitable mining.

I was greatly impressed this year with the possibilities for dredging and hydraulicking on the old creeks, such as Dease, Thibert, and McDame, and believe that there will be a heavy production of gold from the extensive benches on these creeks that have hardly been touched by the hand-mining of the early days. Besides these creeks, there are many on which bed-rock has not been reached and gravel benches not been prospected. Some system of Government assistance by drilling should be worked out along the lines of maintaining a drill or two that could be supplied to operators at a nominal rental, or else the ground drilled by the Government and leased to operators on a royalty basis.

More prospectors were in the field in 1926 than ever before and a surprising amount of development-work is being done. The production of 624 oz. gold this year, while not great, is indicative of the increasing interest in the country. While the majority of this came from Gold Pan creek, there was some from Dease, Thibert, McDame, Masador, and Palmer creeks and Clearwater river, showing that diverse parts of the country are being prospected.

Figures obtained from the Barrington Transportation Company show that there are about 500 white men wintering in the interior beyond Telegraph Creek. I would strongly emphasize the necessity of the completion of the Telegraph Creek–Dease Lake wagon-road in 1927.

Stikine River Section.

A number of prospectors have been in the Clearwater River area, going into its headwaters by a trail up Shakes creek, which trail should be improved. Some good ore from the area around the Devils Elbow on the Stikine river was brought out.

A start should be made toward building prospecting-trails up the larger tributaries of the Stikine, as all this country is along the Eastern Contact Belt and consequently one of the best-mineralized sections in the Province. This section is comparatively easy of access.

The Geological Survey of Canada had a party under F. A. Kerr on the Stikine section this season.

Clearwater River.

S. Barrington, of the Barrington Transportation Company, and associates, of Wrangell, have taken over the *Jackson* and other leases on the North fork of Clearwater. In the fall of 1926 a road was built from the Stikine river, just above Clearwater river, to the *Discovery* claim, a distance of about 2 miles, to permit of taking in a Keystone drill as soon as spring opens. The ground will be thoroughly tested during the 1927 season.

F. Cronholm, who has been developing the Hollywood Mines Company property in the Salmon River section, has also taken up two leases on the North fork of the Clearwater and optioned three more, which he plans to prospect next season. Several leases are being worked by individuals. Altogether there is a new outlook for this area.

Dease Lake Section.

Gold Pan Creek.

Five outfits were working on the creek during 1926 season, two of which were cleaning bed-rock.

On *No. 3 Below*, Swafford was trying to reach bed-rock. He did not take out any gold.

No. 1 Below.—The four partners, R. Brunn, Chas. King, Jim Herdman, and, part of the time, Wm. Brady, cleaned up 168 oz. for the season's work, practically working out this claim.

On *Discovery*, Grady and Ford, the discoverers of the creek, with two men, Nesbitt and Matteo, recovered 262 oz. from bed-rock.

On *14 Above*, Albert Dease took out 5 oz.

From *17* to *26 Above*, Moody and Vickery, working on *No. 21*, took out 40 oz. Mr. Vickery is on the creek all winter trying to get to bed-rock.

On *33 Above*, Geo. Drapich had been working earlier in the season, taking out only about 8 oz.

Palmer Creek.

Several prospectors were working on this and other creeks in the Muddy River country, but very little returns were had.

Dease Creek.

This creek empties into Dease lake at Laketon, on the west side, about half-way between the head and Porter Landing at the foot.

Dickinson Gold Mining Co., Ltd.

Incorporated in the State of Washington with an authorized capital of $25,000 and registered in the Province in December, 1923. The holdings consist of a lease on four claims at the mouth of Dease creek from the Dease Creek Syndicate. Last year lumber was sawn on the ground and a drag-line scraper outfit installed at the mouth of the creek. When I was there in July a hole had been dug 30 to 40 feet wide, over 100 feet long, and about 15 feet deep. It was found impossible to make any further headway because of the accumulated boulders in the bottom of the pit. A clean-up was therefore made, which returned about 10 oz. gold.

The question of the drainage of the pit was discussed. The lake-level was ascertained to be 18 feet below the surface of the pit, which would necessitate a 1,500-foot ditch and gain little or no more depth below the pit. It was decided to try a centrifugal pump, but I do not know whether it was successful or not. The drag-line scraper is clearly not a success where working under water.

The company has a good camp at Laketon and was employing about twenty-four men, some of whom were getting out logs up the lake. Mr. Theis, the vice-president of the company, was on the ground during operations.

H. Coles Leases.—These are situated about 2 miles up from the mouth of Dease creek and contain some good bench ground. An option was taken this fall on this ground by Mr. Bryant, J. Grant, and associates, of Wrangell, who intend testing it in the spring of 1927.

Lease 103.—This is situated about 3 miles up the creek and owned by Tom Bryan. An 8-inch pipe-line, with a 3-inch monitor, was being installed this summer by the owner to work a promising gravel bench. He estimated that it would probably be the spring of 1927 before the plant would be ready for business.

Dease Creek Mines Corporation.

Incorporated in Seattle with an authorized capital of $50,000, of which $15,000 is paid up, and registered in the Province in December, 1923. Its registered office in the Province is Telegraph Creek and in Seattle at 114 East Fifty-fifth Street. The company's holdings consist of leases Nos. 136 to 142, inclusive, on Dease creek. Under the efficient supervision of J. B. Blick a good camp and equipment has been assembled 8 miles up the creek, where sluicing will commence. A road was built from Dease lake to the camp, a distance of 10 miles, over which two tractors have been hauling all season. A sawmill on the ground made the lumber for all the camp buildings, flume-lines, sluices, etc. A cableway was strung across the river at the camp to get pipe-line, monitors, and other supplies over to the point where hydraulicking will be carried on.

An upper camp, about a mile above the main camp, was also established to accommodate the construction of a 2,600-foot ditch, 6 feet across the top and 4 feet on the bottom, and 2,400 feet of flume, to the pressure-box above the lower camp. A steel pipe-line 36 inches in diameter at the penstock, reducing to 14 inches at the monitors, will furnish water under high pressure (I have not the exact figure) for two 7-inch monitors at the pit. I understand that everything is in readiness for a start in the spring.

The company estimates at least ten years of operating on benches, from which sufficient gold has been taken to indicate very profitable returns. This has all the earmarks of a sound, well-managed enterprise.

Thibert Creek.

This creek empties into the lower end of Dease lake at Porter Landing.

On Deloire creek, a tributary of Thibert creek, Geo. Ball and the Finn Bros. have done a lot of work in trying to reach bed-rock and have met with all kinds of difficulties and disappointments. A drain was started two years ago at the lower end of the creek and driven 2,000 feet without gaining sufficient depth to reach bed-rock. This was abandoned and shaft-sinking tried in different places, only to be driven out by quicksand or water. An Empire drill was being taken into the property by dog-team when I was there in July, but I have no information as to the results obtained. It is an ideal situation for a small hydraulicking plant and would not be an expensive installation, as there is a wagon-road from the lake.

Mosquito Creek.—This flows into Thibert creek about 14 miles up from its mouth. H. S. Gibson *et al.*, of Seattle, have taken over George Adsit's lease near the mouth of the creek and staked three adjoining ones above. Last year the ground was drilled, giving results satisfactory to the operators. Lumber was whipsawn and a sawmill built, driven by water-power. Logs were being brought to the mill this summer to make lumber for the construction of 5,000 feet of flume to procure water from a lake above for hydraulicking purposes. The operators have a comfortable camp and are very optimistic of success.

The trail from the end of the wagon-road at Adams camp to Mosquito creek, about 7 miles, is badly in need of relocating and repairs, so that pack-horses may get through to the camp.

Dease Creek Syndicate.

The syndicate owns thirteen leases on Thibert creek, extending from about half a mile above Deloire creek for over 4 miles up the south side of the creek. The first hydraulicking plant was installed on this ground in 1901, but found inadequate to handle the gravel. Later a larger plant was put in and several thousand dollars cleaned up each year, but never enough to make the enterprise a profitable one. In 1919 the property, which had lain idle for some years, was taken over by the Dease Creek Syndicate under the management of George Adams, an Atlin hydraulic operator, who in two seasons' operations realized that the water-supply was insufficient for the amount of gravel to be handled. Work has therefore not been resumed, pending the construction of a pipe-line to bring water from upper Thibert creek adequate for requirements.

I have been over the ground two or three times and, judging by the amount of gold that has been recovered from places where the old channel has been reached, I believe that the property

has great prospective value. Operating conditions are perfect, as the old channel is some 60 feet above the present river, providing ideal dumping-ground the full length of the leases. I would strongly recommend it for investigation.

Beady Creek.—This flows into the Dease river from the east, about 3 miles below Porter Landing. Mr. Kincannon and two partners are driving a tunnel into a high gravel-bank, on the theory that there is an old channel of the creek in that direction. A tunnel has been driven about 60 feet and will be continued with the hope of hitting rim-rock. As some gold was taken from Beady creek in this vicinity in the early days there may be possibilities.

McDame Creek.

This creek flows into Dease river from the north about 80 miles below the Dease lake. The Dease river is a good waterway to McDame, with the exception of 4 or 5 miles just after it leaves the lake. This stretch is winding, shallow, and full of snags; also at Cottonwood rapids the channel is full of great boulders, which makes the down-trip extremely dangerous for loaded scows. If the snags and sweepers from the bank were removed from the upper stretch and the boulders blasted out of the rapids it would improve the river 100 per cent. This work could be done in the late fall or early spring during extreme low water and would not require a heavy expenditure if properly handled.

Pendleton Gold Mining Co., Ltd.

Incorporated in the State of Washington with a capitalization of $500,000, divided into 500,000 shares. It was registered in the Province in 1920, with its head office in Victoria. The company's property consists of lease No. 69 at China bar, 11 miles up McDame creek from its mouth. In 1924 a wagon-road was built by the company from McDame, the Hudson's Bay Company's post, and 45 tons of outfit taken in. This consists of a drag-line scraper, which with flume, dump-box, and sluices were installed on the ground.

The plant was put into operation in 1926 and a pit about 25 feet wide, 75 feet long, and 15 to 20 feet deep was dug in the river-bar on the west side of the creek. As in the case of the Dickinson Mining Company operating a similar outfit at the mouth of Dease creek, it was found impossible to get the gold with the scraper working under water, so a clean-up was made, yielding 21 oz. gold. This resulted in the whole outfit being moved down the creek to the lower end of the lease and a drain-ditch started for the purpose of unwatering the pit at the upper end. About 500 feet of ditch was dug without encountering any gold until about the last 50 feet. Here a pay-streak a few inches in thickness was cut, lying flatly, with a slight dip away from the present river-channel and about 10 feet below the surface. Good pannings were obtained from this streak, the results of which were broadcasted, and most extravagant and misleading statements made.

The facts are that it is very doubtful if the ditch is on company ground for some distance; that the pay-streak is not on bed-rock; that there is no gold in the gravel above the pay-streak nor below it, so far as gone; that the ground has never been tested by drilling, nor, so far as I could learn, has bed-rock ever been reached on this lease; therefore no authentic data on which to base valuations.

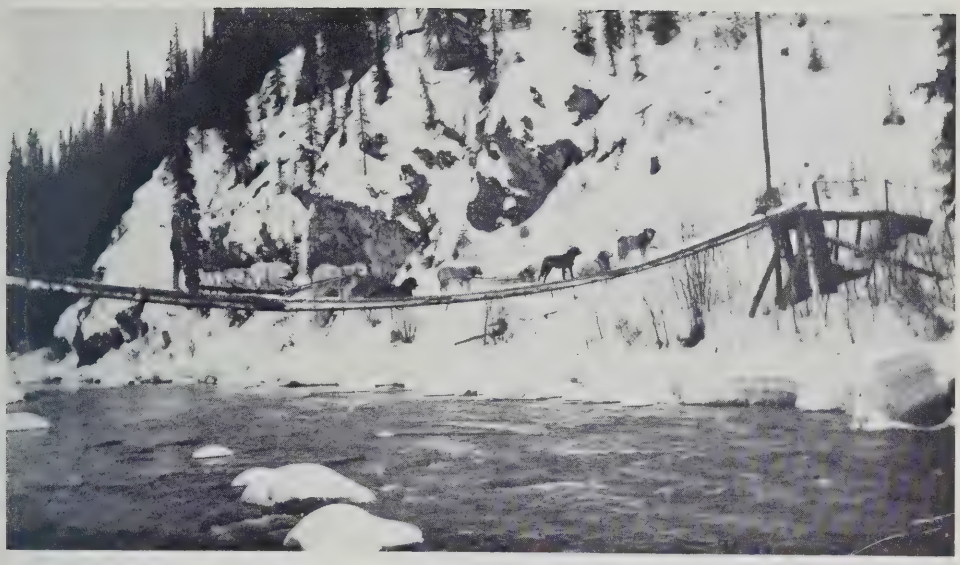
I think it is ground with favourable possibilities, as demonstrated by the rest of the creek. The drag-line scraper has proven useless for undrainable ground; therefore dredging would seem to be the only solution, but the ground should be tested by drilling first.

Standard Mining Corporation.

A State of Washington incorporation with an authorized capital of $250,000, fully paid up. It was registered in the Province in September, 1925, with its head office in the London Building, Vancouver. This spring, under the direction of B. J. O'Reilly, a Keystone drill was taken in to McDame creek and operated on ground on the west side of McDame creek above the Pendleton lease. There is a series of high gravel benches on either side of the creek, probably representing different levels of the creek before reaching its present bed, and possibly containing the channel of the old river.

At the base of these benches, where rim-rock is exposed, some of the richest diggings were worked in the early days. Hydraulicking was of course undeveloped at that time, and consequently, as work was extended into the bank, the overburden became too heavy to remove by methods then used, nor was the ground rich enough for drift-mining.

The company has acquired under option nine leases, on which drilling was started the first week in July and continued through until late in the fall. No information is available as to the



Nakina River, Atlin M.D.

Telegraph Creek-Dease Lake Road, Stikine River.

results of this work. If satisfactory, it will mean much not only to McDame creek, but the areas in the surrounding country where conditions are similar.

Godfrey Leases.—These are situated about 13 miles up McDame creek, or about 2 miles above the Pendleton camp, on the east side of the creek. A considerable amount of work has been done from year to year without getting anywhere. A flume and hydraulic outfit were put in some years ago and a little ground worked out, but no gold of any account was found. This year Charles Hewitt, an old-time mining man in the Province, has taken charge of the work and will drive a tunnel into the high gravel-bank on the belief that an old river-channel will be found. This work will be of great value to this side of the creek, for should the theory prove correct and "pay" found there is plenty of ground to be worked.

Crawford Lease.—This is owned by Crawford & Wheaton and is situated at the mouth of the First North fork of the creek, at the old town of Centreville, which was a live camp about fifty years ago. This year lumber was whipsawn and a flume over 200 feet long built to bring water from the creek above to the top of a high gravel-bank, which it sluices down to the boxes and flume below, which are 300 feet long to obtain dumping-room. By this temporary method about 20 oz. gold was taken out in 1926 from the top gravel, bed-rock of course never having been reached. These two men are planning on installing a small hydraulicking outfit and the chances are favourable for making a success of it.

Wing Leases.—I did not get up to this property, which is about 30 miles up McDame creek. D. L. Wing and partners have installed a small hydraulicking plant and I understand have been working under difficult conditions. Their output this year was only about 20 oz. gold.

From the foregoing it will be seen that there has been a very appreciable amount of development being carried on on this creek and, in fact, throughout the whole Dease Lake country. The drilling operations of the Standard Corporation will decide the question as to whether there are workable values in the big gravel benches. Should the results prove favourable it will not only warrant big operations on McDame creek, but will indicate great possibilities throughout this section, where similar conditions exist.

ATLIN MINING DIVISION.

This Division comprises the north-western corner of the Province and is, especially around the lakes, one of the finest countries out-of-doors in the summer season.

Prospecting has been neglected in preference for placer-mining, but operations on the properties of the Engineer Gold Mines, Limited, and Atlin Silver-Lead Mines has revived interest in lode-mining. Ore freight rates are very reasonable over the White Pass & Yukon Railroad to Skagway, but due to high incoming-freight rates operating costs are high. Winter operating conditions are difficult.

Placer production has been about normal this year ($44,318), but operations on Pine, Ruby, and Otter creeks give promise of a substantial increase in output for the future.

Spruce creek continues to be the main producer, but is becoming more and more handicapped on account of lack of drainage facilities for the workings farther up the creek.

There is some prospecting each year on other creeks, but nothing of any importance has been reported. From the old records of O'Donnel creek, and the facilities for working it, I wonder that it has not been seriously investigated before now.

Time would not permit of my going into the Atlin country this season and I am therefore indebted to C. L. Munroe, Gold Commissioner at Atlin, for information.

Taku Inlet Section.

This section is the drainage area of the Taku river, which empties into the head of Taku inlet, which in turn opens up into Stephens passage, about 16 miles south of Juneau, Alaska. The inlet is about 18 miles long to the mouth of the river, at Bullard's ranch, from which it is about 10 miles to the Alaska-British Columbia boundary-line.

The Taku river is navigable for small gas-boats to the confluence of the Nakina and Inklin rivers, and from there up the Nakina for another 10 miles, by canoe or river-boat, to the mouth of the Sloko river, flowing in from the north. From the Sloko there is an old Indian trail along the north side of the Nakina to Silver Salmon river, which it follows up to the Dominion telegraph-line. The telegraph-line may be followed through to Atlin lake or there is a trail to

O'Donnel creek, from which point there is a good auto-road to Atlin. The total distance is approximately 90 miles.

The eastern border of the Coast Range granites, where the Eastern Contact Belt is entered, is about 10 miles east of the boundary-line. This area, on the same mineral-belt, is therefore about 55 miles south of the *Engineer* mine on Tagish lake and 230 miles north of the Stewart country at the head of Portland canal. The same geological conditions obtain here as in the producing sections of this mineral-belt, making it a very favourable area for prospecting. One property, the *Tulsequah Chief* group (*see* 1923 Annual Report) on the Tulsequah river, which flows into the Taku river about 28 miles from its mouth, had some development-work done on it in 1923 by the Alaska Juneau Mining Company, but it did not meet the company's requirements.

The only activity this year that I know of was about 40 miles up the Nakina river, where A. DeRoux, of Juneau, with whom is associated Mr. Sheidley, of Kansas City, has been establishing camps, building trails, and otherwise preparing to explore some placer-ground near Silver Salmon creek.

Rainy Hollow Section.

This is the drainage area of the Chilkat river and its tributary, the Klehini, which empties into the head of Chilkat inlet. The section is reached by way of Haines, on the west side of Chilkoot inlet, just above the head of Lynn canal. The Alaska Road Commission has built a first-class truck-road from Haines to the British Columbia-Alaska boundary, a distance of 44 miles. From there to Rainy Hollow is 12 miles, through which there was at one time a fairly good road, but which has now become impassable.

There are a number of groups of claims in this section, notably the *Maid of Erin*, which has had a lot of development-work done on it before the Alaska section of the road was fit for freighting. The showings are copper ores, bornite and chalcocite, occurring as replacements in limestone. (*See* 1921 Annual Report.) There are promising showings of galena and zinc-blende on other properties.

About 2 miles from Pleasant camp (at the Boundary) the *Stampede* has been located by "Stampede John" Stenbraten. This is an old group, formerly owned by Saucier & Goddard, of Haines, Alaska, on which a quartz vein showing some free gold occurs in granite formation.

The section undoubtedly warrants the expense of putting the 12 miles of road in good condition.

Tagish Lake Section.

Engineer Gold Mines, Ltd. (*See* 1924–25 Annual Reports.) Incorporated in the State of Delaware with a capitalization of $1,000,000 and in May, 1924, was registered in British Columbia. The company's holdings consist of the *Engineer* group of seven claims, situated on the east side of Tagish lake near the south end. The development and equipment of the property during the past two years has entailed a very heavy expenditure. I did not examine the mine during 1926 and am therefore not in a position to draw any conclusions as to the results of the year's development-work. I understand that the winter programme will include the sinking of the shaft a further 500 feet on the "E" vein, which vein has so far proven the most reliable one on the property. During the summer 9,204 tons of ore was milled, producing $162,473, which includes returns of concentrates shipped.

Gleaner Consolidated Gold Mines, Ltd.—Incorporated in 1922 with a capitalization of $1,000,000, divided into 4,000,000 shares of 25 cents each, with its registered office in the Union Bank Building, Vancouver. A comprehensive plan of development-work was laid out for the property, which adjoins the *Engineer* up the hill, and carried out during the winter and early summer of 1926, when operations ceased. I have no information as to results obtained nor of the plans of the company.

Kirkland Gold Mines, Ltd. Incorporated in 1925 with a capitalization of $1,000,000, divided into 2,000,000 shares, with its registered office in Victoria. This group of six claims adjoins the *Engineer* on the south, along the lake, and has identical conditions. Contrary to expectations, only necessary assessment-work was done this year. It is evident that the development of this area will depend upon the success of the *Engineer*.

Happy Sullivan. There are three claims in this group—*Crackerjack*, *Gold Hill*, and *Gold Bullion*—situated about 1½ miles up Goat creek, which empties into Tagish lake a short distance above the *Engineer*. There is a big quartz vein about 22 feet in width exposed on the surface, carrying small values in gold and silver. I understand

that samples of free-milling gold ore were brought in from prospecting-work on the claims this summer.

Spokane. This group is situated on Big Horn creek, which empties into Tagish lake opposite Golden Gate, and is composed of three claims—*Spokane*, *Mohawk*, and *Edwin*—owned by Horace Fraser *et al.*, of Atlin. Some little work has been done on the claims, consisting of three tunnels and some surface work, showing a quartz vein 2 to 10 feet wide, sparingly mineralized with iron pyrites. A grab sample taken from a small dump at the highest tunnel assayed $15.20 gold to the ton and ½ oz. silver.

Other properties in this section and the Minister of Mines' Report in which they are described are as follows: *Big Horn*, 1921; *Brown*, 1918; *Callaghan*, 1918; *Copper Island*, 1918; *Laverdiere*, 1918; *Rupert*, 1918; *Venus*, 1918; *Genus Extension*, 1918; and *White Moose*, 1918.

Atlin Lake Section.

Atlin Silver-Lead Mines. (*See* 1924 and 1925 Annual Reports.) There are in this group twenty-four claims and fractions, owned and operated by J. M. Ruffner, of Atlin. The claims are situated on Vaughan mountain, about 10 miles up Fourth of July creek and 14 miles by wagon-road from Atlin. Briefly, the country-rock is granite, which has been intruded by a number of parallel dykes, which apparently have formed weakness lines for subsequent shearing and mineralization. These fissures are up to 20 feet in width and filled with a soft, heavily oxidized material, in which are ribs of quartz, mineralized with pyrite, zinc-blende, galena, arsenopyrite, ruby and native silver, carrying values in gold and silver.

A great deal of work has been done on the different veins, Nos. 2 and 4 receiving the most attention. This has mainly been in the endeavour to get below the intense surface oxidation. Last year the property was under lease to the Federal Mining and Smelting Company, whose engineers planned and directed the work, which was carried out by the owner, J. M. Ruffner. Under this arrangement about 250 feet of drifting was done on No. 4 vein at 4 A tunnel, which was in about 70 feet. This work exposes an ore-shoot about 100 feet long, averaging about 3 feet in width, with an average value of $2 gold to the ton, 25 oz. silver to the ton, and 5 per cent. lead. Later work in an open-cut, 4 AA, above this tunnel and beyond the present face exposed some very fine ore, which will be further developed.

In the meantime No. 2 vein had been traced down the hill and by a series of trenches at 2 X a very encouraging showing of ore was exposed. Work was then concentrated here and a cross-cut tunnel driven 39 feet diagonally across the formation, cutting a vein at 25 feet from the portal, and continuing another 14 feet through a dyke to the granite. A 15-foot drift on the vein had been driven, the face showing about 2½ feet of high-grade ore. Up to the end of last year the drift had been extended over 100 feet, following the granite which it encountered in a short distance, and showing a little ore all the way.

I did not have time to get into the property in 1926, but my information is that the Federal people continued this drift to about 400 feet from the portal. At about 300 feet in a shoot of high-grade ore 4 feet wide was encountered and drifted on for 12 to 15 feet, when it narrowed down to about the same conditions as the balance of the drift. The face was at about 400 feet when the company's engineer examined the work and concluded that the results did not warrant further work by the company, and recommended withdrawal, which was carried out.

Mr. Ruffner then decided to crosscut at the 300-foot point, where the short shoot of high-grade had been drifted through, and found that the high-grade vein lay to the left. After satisfying himself of this he turned the main drift to the left from the face at 400 feet and again crosscut the vein and ore-body. This has now been drifted on and proven for a length of 225 feet, with a width of from 13 to 21 feet.

A winze was sunk 50 feet at the 300-foot station and the ore-body crosscut from the bottom of the winze. Here it is stated to be 21 feet wide; six sectional samples across the 21 feet, taken by the manager, Mr. Ruffner, gave an average of about $46 to the ton in gold, silver, lead, and zinc values, the gold and silver values greatly predominating. This certainly seems to constitute a real ore-body.

About 162 tons of ore was shipped this summer, which netted about $80 a ton after deducting freight and treatment rates. One car-load lot of 36 tons netted $118.40 a ton.

Assistance was granted this fall by the Mines Department toward the building of 8 miles of new road on the north side of Fourth of July creek from the mine to the main wagon-road.

I believe this has been graded to within 1½ miles of the lake and that motor-trucks were taken through to the mine in the fall of 1926. It is expected that work at the mine will be continued throughout the winter and that a substantial tonnage will be delivered at the lake for boat shipment in the spring. Mr. Ruffner is to be commended for his perseverance on this property under adverse conditions and circumstances.

Mallory's Claims.

These are the *Rambler*, *Gambler*, *Big Canyon*, *Big Canyon No. 2*, *Big Canyon No. 2 Extension*, and *Big Canyon Extension*, owned by John Mallory, of Atlin, Ellen Mallory, and John Cunningham. The claims are situated on Vaughan mountain, along Crater and Vulcan creeks, and adjoin the Atlin Silver-Lead Mining Company's claims on the south-west. On the *Big Canyon* the Crater Creek canyon cuts and exposes a mineralized vein or dyke for a width of from 25 to 30 feet. The hanging-wall portion of the vein for a width of 8 to 10 feet is a breccia of quartz and dyke rock, very slightly mineralized and becoming more quartzose toward the centre of the vein, which is the best mineralized. The foot-wall section is practically straight dyke-rock.

At 3,900 feet elevation a tunnel was driven 170 feet on the ore, which occurs in parallel bands, bunches, and small veinlets. A few tons sorted from the tunnel and open-cut above averaged about 27 per cent. lead and 50 oz. silver to the ton. An independent sampling of the tunnel gave an average of 11.4 oz. silver across 6 feet for a length of 70 feet.

Another vein north of this, just below the forks of Crater creek, follows the north bank of Vulcan creek. A shallow shaft and a couple of open-cuts show a well-defined fissure, between granite walls, from 8 to 12 feet wide. It is intensely oxidized. A sampling of the shaft gave 15 oz. silver to the ton across 6 feet. It is a well-defined vein and the values would suggest gaining further depth.

These two veins are presumably veins Nos. 6 and 7 appearing on Ruffner's claims farther up the mountain. They are worth further exploration.

Ogdad Mining Co., Ltd. (Imperial).

This company was incorporated in June, 1923, with a capitalization of $1,500,000, divided into 1,500,000 shares. The registered office is 601 London Building, 626 Pender Street West, Vancouver. The company's holdings consist of eleven Crown-granted mineral claims and four surveyed claims, as follows: *Nanaimo*, *Lucky Liverpool*, *Paris Exhibition*, *Unknown*, *Nimrod*, *Imperial*, *Sultana Fraction*, *Transit Fraction*, *Kitchener*, *Independence Fraction*, *Ida E.*, *Princess Pat*, *Pilot*, *Observer*, and *R.A.F.*, situated on Munro mountain about 5 miles from Atlin. The main road from Atlin to Discovery runs along the base of the hill within a short distance of the claims. Mining conditions are perfect.

The old *Imperial* group of four claims was reported on in the Minister of Mines' Report of 1918, page 95, under the heading "Munro Mountain." All the work done on the company's property is on these original claims and consists practically of two tunnels. The upper one is a crosscut of 20 feet from the surface to the vein, which was then drifted on 20 feet to the east and 160 feet to the west. In the west drift an ore-shoot 50 feet long was exposed and stoped through to the surface for feed for a 5-stamp mill situated at the foot of the hill. The mill-feed is said to have averaged around $7 to the ton in free gold.

About 100 feet below this tunnel another was driven as a crosscut to the vein, of 110 feet. Short drifts were run each way on the vein, showing it to be up to 8 feet in width of quartz, very much shattered and oxidized, and carrying only traces of gold and silver. The following samples were taken:—

No.	Width.	Location.	Gold.	Silver.
	Inches.		Oz.	Oz.
1	....	Broken quartz from two open-cuts on surface, west of stope	0.90	0.3
2	20	Across east face, upper tunnel, 6 inches quartz, balance oxidized	0.02	Trace
3	6	Quartz, west face, upper tunnel	0.06	0.2
4	22	Quartz, 10 feet back from west face, upper tunnel	0.02	Trace
5	20	Quartz, 20 feet back from west face, upper tunnel	0.02	Trace
6	16	Quartz, at top of west end of 8-foot winze, upper tunnel	0.02	0.1
7	10	Quartz, at bottom of east face of winze, upper tunnel	0.04	0.4
8	20	Quartz, 33 feet east of east end of winze, half-way along stope	1.68	0.4
9	24	Broken-up quartz, 20 feet from east face, lower tunnel	Trace	Trace
10	18	Quartz, west face, lower tunnel	Trace	Trace

Little values appear to be left at any place in the old workings. However, the upper tunnel continued west might encounter another ore-shoot such as was stoped out. Also the driving of the lower tunnel, where less oxidation and shattered conditions are to be expected, would be good development.

Placer-mining.

Spruce Creek.—There were about a dozen operators on this creek during the season, who cleaned up a total of $13,785, Smith and Carlson being the heaviest producers, with $3,750.

McKee Creek.—George Adams, hydraulicking on this creek, had the largest individual clean-up in the district, with $10,255.

Otter Creek.—The Mines d'Otter Creek Company, under the management of Henri Maluin, took out $9,500 this season, which is pretty well up to former years. It is claimed that true bed-rock has never been reached on this creek, all the gold having been obtained from rim and a false bed-rock. Examinations of the creek have been made during the past two years, supposedly with the idea of starting operations down at the mouth of the creek at Surprise lake and working into bed-rock at that level.

Birch Creek.—H. P. Pearce cleaned up $800.

Boulder Creek.—Gus Anderson took out $2,128.

Ruby Creek.—The Placer Gold Mines Company reached bed-rock this season after driving a 1,100-foot tunnel. Good values were found on bed-rock and $1,904 taken out. This work, on the lower end of the company's leases, will give access to several years' working-ground and next season should see something like the old production. Operations have been under the able supervision of Chas. Leonard, assisted by C. Titus.

E. Turnquist has been working above the company's ground, endeavouring to get to bed-rock through the lava-flow which covers the gravel, practically from the company's line up the creek. He cleaned up in December, getting $1,808, which is decidedly encouraging for the upper creek.

On Wright creek Frank Brown and Fred Boran took out $1,936, and on O'Donnel river N. Murphy recovered $400 and T. Prpich took out $610.

Pine Creek.—In 1925 the Discovery Mining and Power Company, Limited, installed an hydraulicking plant on this creek under the supervision of Andrew Sostad. (*See* 1925 Annual Report.) Operations were commenced under the same management on July 1st, 1926, and with three monitors, two in the pit and one stacking tailings, over 600,000 cubic yards of top gravel were sluiced. When operations closed down on November 10th about 490 feet of 4- by 4-foot sluice-boxes were put in. The gold recovered amounted to only a few ounces, but nothing is expected from the top gravels for some distance yet, nor is a great deal expected from bed-rock for some distance after it is reached. About twenty-eight men were employed.

Index of all Mineral Claims, Groups of Claims, and Companies in the North-western District (No. 1) contained in the Annual Reports of the Minister of Mines from 1917.

Name.	Location.	Annual Report.	Further Reference.
Aberdeen group	Marmot river	1923	
Aeroplane claim	Moresby island, Q.C.I.	1918	
Alaska Canadian Consolidated Gold Mines	Salmon river	1925	Premier Extension Mining Co., Ltd.
Albany Mining Co., Ltd.	Glacier creek	1925	
Alder island	Queen Charlotte islands	1922	
Alexander group	Seymour inlet	1917	
Alder island	Alice arm	1922	
Alice Arm-La Rose Mining Co., Ltd.	Alice arm	1925	La Rose group.
American Mining and Milling Co.	Salmon river	1922	
Americus Girl group	Bitter creek	1925	
Anglo-Belgian Mines, Ltd.	Alice arm	.....	Devlin Zinc group.
Argents Mines, Ltd.	Bear river	1925	Vetron and Comet groups.
Atlin Silver-Lead Mines	Atlin	1922 to 1925	Big Canyon and Ruffner groups.
August group	Stikine river	1919	
Autumn group	Amesbury, C.N. Rly.	1923	
Aztec group	Bear river	1920	Dalhousie Mining Co., Ltd.
Bald Mountain group	Porcher island	1916, 1920, 1922	International Copper Co.
Barite Gold Mines, Ltd.	Bear river	1924, 1925	

INDEX OF ALL MINERAL CLAIMS, GROUPS OF CLAIMS, AND COMPANIES—*Continued.*

Name.	Location.	Annual Report.	Further Reference.
Basin group	Alice arm	1924	
Bayview group	Bear river	1919, 1920	Bayview Mining Co., Ltd.
Bayview Mining Co., Ltd.	Bear river	1925	Bayview and Gold Cliff groups.
B.C. Bonanza Mines, Ltd.	Salmon river	1925	Spider group.
B.C. Silver Mines, Ltd.	Salmon river	1919 to 1925	
B.C. Verde group	Portland canal	1921	
Bear group	Kitsumgallum lake	1920, 1923	Black Bear group, Chiro Mining Co.
Bear River Mining Co., Ltd.	Bear river	1917	
Beaver group	Terrace, Thornhill mt.	1924	Lucky Seven group.
Belmont-Surf Inlet Mines, Ltd.	Surf inlet	1917 to 1925	
Bellevue group	Illiance river	1920, 1921	Alice Arm Holdings Co., Ltd.
Beverley group	Alice arm	1923	
Big Canyon and Ruffner groups	Atlin	1921	Atlin Silver-Lead Mines.
Big Horn group	Atlin	1921	
Big Missouri group	Salmon river	1917 to 1920	Big Missouri Mining Co., Ltd.
Big Missouri Mining Co., Ltd.	Salmon river	1925	Big Missouri group.
Black Bear group	Alice arm	1919, 1920	Esperanza group.
Black Bear group	Kitsumgallum lake	1925	Bear group.
Black Diamond group	Alice arm	1918, 1922	
Black Bear claim	Stewart, Glacier creek	1924	
Black Wolf group	Kitsumgallum lake	1921	Black Wolf Mining Co., Ltd.
Black Wolf Mining Co., Ltd.	Kitsumgallum lake	1925	Black Wolf group.
Blue Bell group	Terrace	1922	Copper Queen group.
Blue Grouse group	Kitsumgallum lake	1918	
Blue Mule group	Moresby island	1920, 1922, 1923	
Blue Ribbon group	Alice arm	1921	Kitsault River Mining and Dev. Co., Ltd.
Bolton group	Klekane inlet	1922	Pink Rose group.
Bonanza claim	Alice arm	1918	
Boundary group	Salmon river	1918	
Brian Boru group	Kitsumgallum lake	1925	
Brown group	Atlin	1918	
Brown group	Salmon river	1925	
Bunker Hill group	Alice arm	1925	
Bush Mines, Ltd.	Salmon river	1918, 1919	National Silver Mines, Ltd.
Callaghan group	Atlin	1918	
Camalachie claim	Alice arm	1918	
Canyon claim	Alice arm	1924	
Cape Nome claim	Alice arm	1918	
Cariboo group	Alice arm	1921	Lynx group.
Carpenter group	Alice arm	1918	
Carpenter group	Hastings arm	1922	
Cassiar Dredging Co.	Dease lake	1924	
Central group	Alice arm	1919, 1922	Homeguard group.
Chance group	Alice arm	1923	Last Chance group.
Chief Metals Co., Ltd.	Salmon river	1925	
Chiro Mining Co., Ltd.	Kitsumgallum lake	1924	Bear group.
Clearwater river	Tributary, Stikine river	1925	
Climax group	Alice arm	1918, 1925	
Columbia group	Alice arm	1918	
Collison bay	Moresby island, Q.C.I.	1918	
Comet group	Bear river	1920	Argenta Mines, Ltd.
Consolidated Homestake Mining and Development Co.	Alice arm	.....	Homestake and Toric groups.
Copper group	Kitsumgallum lake	1918	
Copper Cliff group	Alice arm	1918	
Copper island	Moresby island, Q.C.I.	1918, 1919	
Copper island	Atlin	1918	
Copper King group	Glacier creek	1918	
Copper Queen group	Terrace	1925	Blue Bell group.
Copper Queen group	Moresby island, Q.C.I.	1919	
Cordila group	Princess Royal island	1922	
Cornerstone group	Atlin	1924	
Crawford group	Swanson bay	1923	Millbank group.
Cronholm-Bartholf Mines, Ltd.	Salmon river	1923	Hollywood Mines, Ltd.

INDEX OF ALL MINERAL CLAIMS, GROUPS OF CLAIMS, AND COMPANIES—*Continued.*

Name.	Location.	Annual Report.	Further Reference.
Dalhousie Mining Co., Ltd.	Bear river	1925	Aztec group.
Dandy group	Glacier creek	1921	Victoria Mines, Ltd.
Dardanelles group	Terrace	1918	
David Copperfield group	Alice arm	1919	
Dease Creek Mines Corporation	Dease lake	1924, 1925	
Dease Syndicate	Dease lake	1924	
Delnorte group	Meziadin lake	1922	
Deloire creek	Dease Lake section	1923, 1925	
Devlin Zinc group	Alice arm	1925	Anglo-Belgian Mines, Ltd.
Dickinson Mining Co., Ltd.	Dease lake	1924, 1925	
Discovery Mining and Power Co., Ltd.	Atlin (Pine creek)	1925	
Dolly Varden Mines, Ltd.	Alice arm	1917 to 1920, 1922	
Drum Lummon Mines, Ltd.	Douglas channel	1917 to 1920, 1922 to 1924	Paisley Point Mines, Ltd.
Dunwell claim	Glacier creek	1920	Dunwell Mines, Ltd.
Dunwell Mines, Ltd.	Stewart	1922 to 1925	Dunwell claim.
Eagle claim	Porcher island	1919	
Early Bird	Moresby island	1918	
Ecstall river	Skeena river	1917, 1918	
E.F.G.H. group	Terrace	1918	
Eldorado Gold Mining Co., Ltd.	Salmon river	1923	Eldorado Gold Mines Consolidated, Ltd.
Eldorado Gold Mines Consolidated, Ltd.	Salmon river	1925	Eldorado Gold Mining Co., Ltd.
Ellen group	Shuttle islands, Q.C.I.	1921	
Emperor Mines, Ltd.	Glacier creek	1924, 1925	
Engineer group	Marmot river	1921	
Engineer Mine	Atlin	1918	Engineer Gold Mines, Ltd.
Engineer Gold Mines, Ltd.	Atlin	1924, 1925	Engineer mine.
Enterprise group	Bear river	1925	
Esperanza group	Alice arm	1923, 1924	Black Bear group.
Evening Sun and Columbia claims	Glacier creek	1919	Rush Columbia Mines, Ltd.
Excelsior and Eagle claims	Glacier creek	1919	
Fisher group	Kitsumgallum lake	1925	
Forty Nine group	Salmon river	1918 to 1921	Forty Nine Mining Co., Ltd.
Forty Nine Mining Co., Ltd.	Salmon river	1923, 1925	Forty Nine group.
Fox claim	Alice arm	1918	Kitsault River Mining and Dev. Co., Ltd.
Fraser group	Marmot river	1919	Sterling Silver Lead Mines, Ltd.
Galena Farm group	American creek	1925	
George Copper Mines	Bear river	1917 to 1919	George Gold Copper Mining Co., Ltd.
George Gold Copper Mining Co., Ltd.	Bear river	1925	George Copper Mines.
Georgia River Mining Co., Ltd.	Georgia river	1917, 1922	Guggenheim group.
Gibson group	Bear river	1919	Mobile group.
Glacier claim	Alice arm	1918	
Glacier group	Salmon river	1920	
Glacier Creek Mining Co., Ltd.	Glacier creek	1924	
Gleaner Consolidated Gold Mines, Ltd.	Atlin	1918, 1925	
Glen No. 1 claim	Kitsumgallum lake	1925	
Gloria Mining Co., Ltd.	Portland canal	1922	North Country Mining Co., Ltd.
Gold Bug group	Pitt island	1922	Rowe group.
Gold Cliff group	Bear river	1925	Bayview Mining Co., Ltd.; Pacific Mines, Petroleum, and Dev. Co.
Gold Cup group	Kitsumgallum lake	1924	
Golden Nib claim	Terrace	1925	Iron Hat claim.
Golden Penny claim	Terrace	1920	
Goldie group	Glacier creek	1925	
Gold Ore Mining Co., Ltd.	Bear river	1925	
Gold Pan creek	Dease lake	1924, 1925	
Golskeish Mines, Ltd.	Anyox	1920	

INDEX OF ALL MINERAL CLAIMS, GROUPS OF CLAIMS, AND COMPANIES—*Continued.*

Name.	Location.	Annual Report.	Further Reference.
Graham Island black sands	Graham island, Q.C.I.	1923 to 1925	P.B.C. Mines Co.
Granby Cons. M.S. and P. Co., Ltd.	Anyox	1917 to 1925	
Grey Bird claim	Stikine river	1919	
Grey Copper group	Bear river	1917	Stewart High Grades, Ltd.
Guggenheim group	Georgia river	1918	Georgia River Mining Co., Ltd.
Hanna group	Anyox	1922	
Happy Sullivan group	Atlin	1918	
Hercules Mines, Ltd.	Salmon river	1918, 1920, 1923	
Hibernian group	Rainy Hollow	1918	
Hollywood Mines, Ltd.	Salmon river	1925	Cronholm-Barthoif Mines, Ltd.
Homeguard group	Alice arm	1924	Central group.
Homestake claim	Moresby island	1923	
Homestake group	Alice arm	1918, 1921	Consolidated Homestake Mining and Dev. Co., Ltd.
Hope group	Moresby island, Q.C.I.	1918	
Hunter group	Kitsumgallum lake	1918	
Idaho group	Marmot river	1921, 1923	Porter-Idaho Mines, Ltd.
Imperial group	Atlin	1918	Munro mountain.
Ikeda Mines, Ltd.	Moresby island, Q.C.I.	1918, 1919	
Independent group	Bear river (Goose creek)	1919, 1921	Independence Gold Mining Co., Ltd.
Independence Gold Mining Co., Ltd.	Bear river (Goose creek)	1923 to 1925	Independent group.
Independent group	Alice arm	1918, 1919	
Indian Mines, Ltd.	Salmon river	1917, 1918, 1920, 1922	Indian Mines Corporation, Ltd.
Indian Mines Corporation, Ltd.	Salmon river	1923 to 1925	Indian Mines, Ltd.
International group	Salmon river	1918	
International Copper Co., Ltd.	Porcher island	1917, 1919	Bald Mountain group.
Iron Duke group	Moresby island, Q.C.I.	1918, 1922	
Iron Hat claim	Terrace	1918, 1920	Golden Nib claim.
Iskut Mining Co.	Iskut river (Stikine river)	1917, 1919	
Jenny Jiggs and Florence claims	Kitsumgallum lake	1925	
Jitney group	Porcher island	1917	
Jones group	Moresby island, Q.C.I.	1918	
Juneau group	Kitsumgallum lake	.....	*See* Treadwell No. 2 group.
Jutland group	Bitter creek	1919	
Kalum Lake Mines, Ltd.	Kitsumgallum lake	1924, 1925	Portland Mining Co.
Kent claim	Alice arm	1918	
Keystone Mining Co., Ltd.	Alice arm	1923	Sunset group.
Kirtland group	Atlin	1918	Kirtland Gold Mines, Ltd.
Kirtland Gold Mines, Ltd.	Atlin	1925	Kirtland group.
Kitchener group	Seymour inlet	1917	
Kitsault River Mining and Development Co., Ltd.	Alice arm	1925	Matilda, Fox, Tip Top claims and Blue Ribbon group.
Lady group	Kitsumgallum lake	1925	
L. & L. group	Glacier creek	1919	L. & L. Glacier Creek Mines, Ltd.
L. & L. Glacier Creek Mines, Ltd.	Glacier creek	1924, 1925	L. & L. group.
Lakeview group	Glacier creek	1918 to 1920	Lakeview Mines, Ltd.
Lakeview Mines, Ltd.	Glacier creek	1924, 1925	Lakeview group.
Lakeview group	Atlin	1918	
La Rose group	Alice arm	1918, 1919	Alice Arm-La Rose Mining Co., Ltd.
Last Chance group	Alice arm	1918, 1919	Chance group.
Little Joker group	Salmon river	1917	Mineral Hill group.
L.L. & H. group	Bitter creek	1920	
Log Cabin group	Kitsumgallum lake	.....	Scenic group.
Lone Maid group	Alice arm	1922, 1923	
Lone Star group	Alice arm	1918	
Lucky Seven group	Terrace	1918, 1920	Beaver group.
Lucky Strike group	Alice arm	1922	
Lucy O'Neill group	Kitsumgallum lake	1921	
Lynx group	Alice arm	1921	Cariboo group.
Lyon group	Alice arm	1924	
Mahood Mines, Ltd.	Salmon river	1920	

INDEX OF ALL MINERAL CLAIMS, GROUPS OF CLAIMS, AND COMPANIES—*Continued.*

Name.	Location.	Annual Report.	Further Reference.
Maid of Erin group	Rainy Hollow, Atlin	1918, 1921	
Mammoth group	Porcher island	1917	
Maple Bay group	Portland canal	1918, 1921	
Marmot group	Kitsumgallum lake	1918	Sunlight group.
Marmot Metals Mining Co., Ltd.	Marmot river	1925	Montana group.
Martin & Shannon group	Khutze inlet	1925	Western Copper group.
Matilda claim	Alice arm	1924	Kitsault River Mining and Development Co., Ltd.
Mayflower group	Bear river	1918, 1925	
M.C. group	Bear river	1922, 1923	
Meal Ticket group	Moresby island, Q.C.I.	1918	
Millbank group	North of Swanson bay	1924	Crawford group.
Mimico group	Glacier creek	1922	Mimico Mines, Ltd.
Mimico Mines, Ltd.	Glacier creek	1925	Mimico group.
Mineral Basin group	Salmon river	1925	
Mineral Hill group	Salmon river	1918, 1919	Little Joker group.
Mineral Hill Mines, Ltd.	Salmon river	1922	Little Joker and Mineral Hill groups.
Mineral Hill group	Kitimat	1925	
Mobile group	Bear river	1921 to 1923	Gibson group.
Molly group	Bear river	1918	
Molybdenum group	Canadian National Rly.	1918	
Monarch group	Alice arm	1918, 1919, 1921	
Montreal group	Bear river	1925	
Montana Fractions	Salmon river	1923	
Montana group	Marmot river	1919, 1922	Marmot Metals Mining Co., Ltd.
Moose group	Alice arm	1918 to 1920	
Morning group	American creek	1925	
Morning Star group	Glacier creek	1923	
Mosquito creek	Dease lake	1925	
Motherlode group	Kitsumgallum lake	1920	
Mountain Boy group	American creek	1919	
Munro group	Salmon river	1922	
Munro mountain	Atlin	1918	Imperial group.
Murdock group	Bear river	1925	
Musketeer group	Alice arm	1918 to 1920	
Nabob group	Glacier creek	1923	
National Silver Mines, Ltd.	Salmon river	1925	
Nome and Yukon claims	Alice arm	1923	
Naname claim	Alice arm	1923	
North Country Mining Co., Ltd.	Portland canal	1923	Gloria Mining Co., Ltd.
Northern Mining and Development Co., Ltd.	Terrace	1925	Golden Nib and Beaver claims.
North Fork Basin claim	Marmot river	1919, 1924	Sterling Silver Lead Mines, Ltd.
Northland Mining Co., Ltd.	Salmon river	1924, 1925	Troy group.
North Star claim	Alice arm	1918, 1919	
N.P. Iron Mines	Terrace (Copper river)	1918	
Oakwood group	Terrace	1925	
Ore Mountain Mining Co., Ltd.	Bear river	1925	
Outland Silver Bar group	Salmon river	1922, 1925	
Outsider group	Portland canal	1918, 1919, 1921, 1922	
Pacific Mines, Petroleum, and Development Co., Ltd.	Bear river	1924	Gold Cliff group.
Paisley Point Mines, Ltd.	Douglas channel	1925	Drum Lummon Mines, Ltd.
Palmer creek	Dease lake	1925	
Patricia group	Marmot river	1921, 1922	
Patterson group	Porcher island	1917, 1919 to 1925	
Pay Roll group	Salmon river	1918	
P.B.C. Mines Co.	Graham island	1924	Graham Island black sands.
Pendleton Gold Mining Co., Ltd.	Dease Lake section	1924, 1925	
Phoenix Silver Mines, Ltd.	Bear river	1924, 1925	
Pine creek	Atlin	1925	Discovery Mining & Power Co.
Pink Rose group	Klekane inlet	1924	Bolton group.
Placer-mining	Atlin	1917 to 1925	

INDEX OF ALL MINERAL CLAIMS, GROUPS OF CLAIMS, AND COMPANIES—*Continued.*

Name.	Location.	Annual Report.	Further Reference.
Portland Mining Co.	Kitsumgallum lake	1922	Kalum Lake Mines, Ltd.
Portland Canal Mining Co., Ltd.	Glacier creek	1924	
Portland Ibex group	American creek	1925	
Porter-Idaho Mines, Ltd.	Marmot river	1924, 1925	Idaho group.
Premier Extension Gold Mining Co., Ltd.	Salmon river	1923, 1925	Alaska Canadian Consolidated Gold Mines, Ltd.
Premier Gold Mining Co., Ltd.	Salmon river	1919 to 1925	Salmon Bear River Mining Co., Ltd.
Prince John group	Bear river	1917 to 1919	Prince John Mining Co., Ltd.
Prince John Mining Co., Ltd.	Bear river	1923	Prince John group.
Prince George group	Marmot river	1921	
Producer group	Moresby island, Q.C.I.	1918, 1919	
Ptarmigan group	Terrace	1918	St. Paul group.
Queen and Queen Frac.	Alice arm	1923	
Queen and Zinc group	Kitsumgallum lake	1925	
Radio Stewart Mines, Ltd.	Bitter creek	1925	
Rainy Hollow section	Atlin Mining Division	1918, 1921	
Red Bluff group	Alice arm	1922	
Red Top group	Alice arm	1919, 1920, 1925	
Rex claim	Alice arm	1924	
Rowe group	Pitt island	1925	Gold Bug group.
Ruby group	Alice arm	1919, 1921	
Ruby Silver Mines, Ltd.	Bear river	1924	
Rufus group	Bear river	1922	Rufus Silver Lead Mines, Ltd.
Rufus Silver Lead Mines, Ltd.	Bear river	1924	Rufus group.
Rupert group	Atlin	1918	
Rush-Columbia Mines, Ltd.	Glacier creek	1925	Columbia and Evening Sun claims.
Ruth and Francis group	Glacier creek	1918	
Salmon Bear River Mining Co., Ltd.	Salmon and Bear rivers	1917, 1918	Prior to Premier Gold Mining Co.
Salmon River High Grades, Ltd.	Salmon river	1925	
Salmon River Motherlode Mining Co.	Salmon river	1920	
Salmon River Silver Mines, Ltd.	Salmon river	1920	
Saloomt group	Bella Coola	1922	
Scenic group	Kitsumgallum lake	1922	Log Cabin group.
Second Thought group	Alice arm	1918, 1921	
Shuttle island	Moresby island, Q.C.I.	1919	
Silverado group	Bear river	1920 to 1922	Silverado Mining Co., Ltd.
Silverado Mining Co., Ltd.	Bear river	1925	Silverado group.
Silver Bar Mining and Development Co., Ltd.	Alice arm	1923	
Silver Band group	Alice arm	1918	Now Sunrise group.
Silver Bell group	Alice arm	1918	
Silver Bell claim	Alice arm	1918, 1919	
Silver Bell group	Portland canal	1925	
Silver Crest Mines, Ltd.	Salmon river	1919, 1920, 1924, 1925	
Silver Cliff group	Alice arm	1918	
Silver Coin group	Kitsumgallum lake	.....	*See* Silver Dollar group.
Silver Dollar group	Kitsumgallum lake	1921	Silver Coin group.
Silver Horde group	Alice arm	1918, 1924	
Silver Leaf group	Alice arm	1924	
Silver Ledge Mining Co., Ltd.	Glacier creek	1925	
Silver Star group	Alice arm	1918, 1919	
Silver Slipper Mining Co., Ltd.	Portland canal	1925	
Silver Tip Mining and Development Co., Ltd.	Salmon river	1920	Silver Tip Mining Co., Ltd.
Silver Tip Mining Co., Ltd.	Salmon river	1925	Silver Tip Mining and Dev. Co., Ltd.
Snowflake group	Terrace (Copper river)	1918	
Society Girl	Terrace	1918	
South Easter Mining Co.	Graham island, Q.C.I.	1918, 1919	
Speculator No. 2 claim	Alice arm	1925	
Spoder group	Salmon river	1919, 1920	B.C. Bonanza Mines, Ltd.

INDEX OF ALL MINERAL CLAIMS, GROUPS OF CLAIMS, AND COMPANIES—*Continued.*

Name.	Location.	Annual Report.	Further Reference.
Spokane group	Atlin (Big Horn creek)	1921	
Standard group	Gibson island	1917	
Standard group	Alice arm	1918, 1922, 1925	
Standard Mines Corporation	Salmon river and Dease lake	1925	Big Missouri, McDame creek.
St. Elmo group	Bitter creek	1919	
Sterling Silver Lead Mines, Ltd.	Marmot river	1925	
Stewart group	Kemano river (Gardner canal)	1917, 1922	
Stewart Central Mines, Ltd.	Bitter creek	1925	
Stewart Consolidated Gold Mines, Ltd.	Bear river (Dease lake)	1925	
Stewart High Grades, Ltd.	Bear river	1925	Grey Copper group.
Stikine group	Stikine river	1919	
St. Paul group	Terrace	1925	Ptarmigan group.
Summit group	Alice arm	1923	
Sunlight group	Kitsumgallum lake	1920	Marmot group.
Sunshine group	Glacier creek	1918, 1919, 1925	Now Sunshine Mining Syndicate.
Superior Mines, Ltd.	Glacier creek	1925	
Surprise group	Terrace	1925	
Swede group	Lockeport, Q.C.I.	1918 to 1921	
Taku River section		1923	
Terminus Mines, Ltd.	American creek	1924, 1925	
Theda Bara and Bebe Daniels claims	Alice arm	1924	
Thunder group	Moresby island, Q.C.I.	1918	
Tiger group	Alice arm	1918, 1919	
Tip Top claim	Alice arm	1918	
Toric group	Alice arm	1918, 1919, 1921, 1923 to 1925	Consolidated Homestake Mining and Dev. Co.
Treadwell No. 2 group	Kitsumgallum lake	1918	
Trouble Frac.	Alice arm	1918	
Troy group	Salmon river	.....	*See* Northland Mining Co., Ltd.
Tulsequah Chief claim	Taku river	1921	
Unicorn group	Salmon river	1919, 1925	
Union Silver Mines, Ltd.	Glacier creek	1925	
United Metals group	Alice arm	1918, 1919	
Unuk River section		1920 to 1925	
Vancouver Mines, Ltd.	American creek	1925	
Vanguard group	Alice arm	1918, 1922	
Venus group	Carcross, Y.T.	1918	
Venus Extension group	Carcross, Y.T.	1918	
Vesuvius claim	Stikine river	1919	
Verona group	Alice arm	1921	
Vetron group	Bear river	1920	*See* Argenta Mines, Ltd.
Victoria claim	Rainy Hollow	1918	
Victoria Mines, Ltd.	Glacier creek	1924, 1925	Dandy group.
Vimy Ridge group	Hastings arm	1922	
War Dance group	Alice arm	1919	
Washington group	Marmot river	1921	
Wells claims	Surf inlet	1920	
Western Copper group	Khutze inlet	1925	Martin & Shannon group.
Whale Channel Mines, Ltd.	Princess Royal island	1919, 1920	
White Heather Mines, Ltd.	Salmon river	1925	
White Moose group	Atlin	1918	
Wild Cat group	Alice arm	1918	
Windsor group	Bitter creek	1924	
Wire Gold group	Marmot river	1924	Sterling Silver Lead Mines, Ltd.
Wireless claim	Moresby island, Q.C.I.	1918	
Wolf group	Alice arm	1918	Dolly Varden Mines.
Wolf claim	Alice arm	1925	
Wright group	Porcher island	1925	
Yankee Boy claim	Alice arm	1918	
Yellowstone group	Salmon river	1918, 1923	
Yukon and Nome claims	Alice arm	1923	

NORTH-EASTERN MINERAL SURVEY DISTRICT (No. 2).

By Douglas Lay, Resident Mining Engineer.

INTRODUCTORY.

The North-eastern Mineral Survey District consists of Omineca, Cariboo, Quesnel, and Peace River Mining Divisions, and occupies a large portion of Northern British Columbia, having an area of nearly 100,000 square miles. The northern, western, and southern boundaries of this district are the arbitrary boundary-lines of the Mining Divisions, but these, where practicable, always follow the watersheds of the country. The eastern boundary is the British Columbia-Alberta boundary-line. The western boundary is roughly 100 miles from the Coast, while the northern and southern boundaries are about 200 miles from the respective Provincial boundaries.

For descriptive purposes in this report the district is reviewed under the main headings of the Mining Divisions, subdivided into sections, as given below. As far as practicable, a section is named after the chief town or place therein. It will be obvious where this is not the case.

Omineca Division—Skeena section; Hazelton section; Smithers section; Telkwa section; Houston section; Topley section; Burns Lake section; Sibola section; Manson section; Fort Grahame section.

Cariboo Division—Barkerville section; Prince George section.

Quesnel Division—Quesnel section; Likely section; Keithley section; Horsefly section.

Peace River Division.

A general description of the geographic, geologic, and topographic features of the district was given in the Annual Report of the Minister of Mines for 1917. In the following table is given a list of the more important reports on this district, in addition to which numerous references can be found in the Summary Reports of the Geological Survey and the Annual Reports of the British Columbia Department of Mines.

List of Reports on District.

Name of Author.	Publication.	Year.	Page.
Dr. Geo. Dawson	Geological Survey of Canada	1875	233
Dr. Geo. Dawson	Geological Survey of Canada	1876	17
Dr. Geo. Dawson	Geological Survey of Canada	1879	Pt. B
Dr. Geo. Dawson	Geological Survey of Canada	1888	73R
Amos Bowman	Geological Survey of Canada	1887–8	Pt. C
R. G. McConnell	Geological Survey of Canada	1894	5C
W. Fleet Robertson	Minister of Mines' Report	1905	89
W. Fleet Robertson	Minister of Mines' Report	1906	101
W. Fleet Robertson	Minister of Mines' Report	1908	66
W. Fleet Robertson	Minister of Mines' Report	1911	95
W. Fleet Robertson	Minister of Mines' Report	1912	65
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GENERAL SUMMARY.

A brief explanation of the form followed in compilation of the annual report of this district seems advisable. Under the heading "General Summary" the aim is to give first a concise but comprehensive statement embodying in a few paragraphs the salient features of the year. Next follows an amplification of the foregoing, under appropriate headings, but without any detail. In this portion of the report special mention is made of any matters of particular interest, such as "Prospecting," "New Discoveries," and so forth. Lastly follows the detailed report under the headings of the various Mining Divisions.

The present year has witnessed marked progress in both lode- and placer-mining and some advance in coal-mining. An optimistic outlook is engendered not merely because the production in all branches of mining for 1926 showed a marked improvement over that of the previous year, but also because of new discoveries.

Discoveries have been made, or have been brought to light, during the year which possess the earmarks of importance—namely, a mineralization of essentially silver and gold values near Topley, on the Canadian National Railway; a deposit of galena on the Ingenika river; and mica of exceptional size on Mica mountain, near Fort Grahame. The first two mentioned are replacement deposits. The last mentioned has not yet been inspected, but information concerning it comes from reliable sources. All these will be more fully referred to in the body of the report, but it might be here stated that, so far as interested capital is concerned, the Topley discovery is the most important of the year in this district.

It is gratifying to record the active development-work carried on. Several companies, entering this district for the first time, have instituted steady development campaigns. Among these may be mentioned British Canadian Silver Corporation, Limited; Cassiar Crown Mining Company; Porcupine Goldfields Development and Finance Company, Limited; and Governor Davis, of Washington, D.C., in the lode-mining field, and the Consolidated Mining and Smelting Company of Canada, Limited, in the placer-mining field. A large number of small-scale operations have been carried on at various points of the district.

So far as actual lode-mineral production is concerned, Duthie Mines, Limited, is in a class by itself, contributing about 90 per cent. of the total.

Highly satisfactory results have been gained by the Cedar Creek Mining Company, operated under contract by B. Boe. Another very gratifying feature of this year's placer operations is the number of areas which have been or are being drilled to determine dredging possibilities.

In the class of non-metallic minerals a good start has been made. The General Holding Company, of Edmonton, has had a force of between ten and twelve men employed in developing its mica properties on Mica mountain, near Fort Grahame. Also a deposit of silicate of alumina has been opened up by B. A. Cunliffe on Borland mountain, near Williams Lake, and a shipment of approximately 120 tons has been made to Vancouver.

The Peace Canyon Mining and Transportation Company is engaged in developing the Gething coal leases near Hudson Hope, on the Peace river.

In the investigation of the Tesla Mountain mineral area south of Eutsuk lake a new pass through the Coast range from Dean channel to the interior was brought to light. The existence of this pass was apparently previously known to trappers only.

Keen interest has been evinced during the season by field engineers, especially in connection with the new discovery at Topley.

A very important deal was consummated towards the close of the season, whereby an option on the *Red Top* group, the new discovery at Topley, was taken by the Standard Silver-Lead Mining Company.

Generally speaking, while the recent slump in silver is unfortunate, there are sound grounds for the belief that this district will witness important developments in the near future.

Of considerable importance to the district is the recent reduction in freight rates on ores to the Trail smelter. The rate on ore valued at $30 a ton is now $6.50 a ton from Smithers to Trail. This rate rises to $7.50 a ton in the case of $50 ore and is $10 a ton in the case of $100 ore. This rate was announced by the Canadian National Railways as being effective from August 2nd. This reduction, taken in conjunction with the fact that the Consolidated Mining and Smelting Company of Canada now accepts concentrating-ores, is of signal service to the mining industry.

The writer desires to express his thanks to the prospectors, operators, and mining men of the district for the many courtesies extended.

Lode-mining.

Steady operations were carried on by Duthie Mines, Limited, at the *Henderson* mine on Hudson Bay mountain. Shipments of lead-zinc ore of high silver content were continued at the rate of between 150 and 200 tons a month, and reached a total for the year of 1,678 tons. An active development campaign is also in progress. Shipments were also made from the following properties: *Silver Cup*, Nine-mile mountain, Hazelton, 60 tons (silver-lead-zinc); New Hazelton Gold Cobalt Mines, Limited, Rocher Déboulé mountain, Hazelton, 25 tons (gold-arsenic); *Fiddler* group, Knauss creek, Dorreen, 97 tons (gold, with small values in silver and lead).

Active development was carried on at the Schufer property, Hudson Bay mountain, by the British Canadian Silver Corporation, Limited; the Cassiar Crown Mining Company on Grouse mountain; at the mica properties on Mica mountain, near Fort Grahame, by the General Holding Company. All these have employed crews of from ten to twelve men.

An option was secured during the summer by Henry Lee Messner, representing New York interests, on several properties in the Babine mountains—namely, the Babine Silver King Mining Company (sixteen claims), *Hyland Basin* group (six claims), *Victoria* group (six claims), *Little Joe* group (seven claims), and *Silver Saddle* group (twenty-three claims). Small-scale operations were started on these properties.

Towards the end of the year options were secured on the *Red Top* group, Topley, by the Standard Silver-Lead Mining Company; on the *Seven Sisters* group, Seven Sisters mountain, Cedarvale, by D.W. Mines, Limited; on a number of claims surrounding the *Red Top* group, Topley, by Porcupine Goldfields Development and Finance Company, Limited. In the last two cases winter quarters were erected and development commenced.

Among other properties which were the scene of considerable small-scale activity may be mentioned *Silver Cup*, *Sunrise*, and *American Boy* (all on Nine-mile mountain, Hazelton).

W. S. Harris and Al. Harris, of the Northern Prospecting and Development Company, were in charge of the first two mentioned, and H. A. Harris carried on development under contract at the last mentioned. At the *Valhalla* and *Kleanza* groups (Usk), at the *Cordillera* group (Usk), and at the *Venus* group (Mineral hill) a certain amount of development beyond assessment-work was carried out.

At the *Red Top* group, Topley, which has attracted so much attention, F. H. Taylor, the discoverer, employed two men, besides himself, constantly from date of discovery in June until the end of October. Valuable development-work was accomplished. On the *Killarney* claim, in Brian Boru basin, Rocher Déboulé mountain, John Creagh, the owner, displayed great energy in building a new trail and cabin, besides much development-work. At the *Brunswick* group, Rocher Déboulé mountain, the owner, J. Miller, worked all last winter on his property and intends doing so this winter. Single-handed, he is erecting a small aerial tram to facilitate ore shipment.

In the Cariboo and Quesnel Mining Divisions considerable interest has been evinced in the quartz veins. In the Quesnel Mining Division, on Black Bear creek, there are a number of wide quartz veins containing in places lenses of galena. An attempt is being made by P. Harrington to hand-sort and ship a galena product. On Yanks peak Talbot & Larsen worked all season on their gold properties.

Placer-mining.

Cariboo and Quesnel Mining Divisions.—A feature of placer-mining was the operation of the Kafue Copper Development Company's dredge on Antler creek. A number of unfortunate accidents occurred earlier in the season, but later on the dredge was digging a portion of the creek, which is very rich, and which the "old-timers" were unable to drift. It is stated that in one month $38,000 was recovered.

The results obtained by B. Boe, operating the property of the Cedar Creek Mining Company under contract, were distinctly spectacular. The rich ground encountered was immediately below or north-west of the "Nugget Patch." It is stated that in one week 651 oz. gold was recovered, one nugget weighing 17 oz. This property is operated by the "pump hydraulic" system.

So far as hydraulic operators were concerned, good water-supply was available for the spring run, but cold weather in September greatly curtailed the fall run. Chief among this class are the John Hopp Mines on Lowhee creek and the *Kitchener* on Keithley creek. Each piped off about 600,000 cubic yards.

The Consolidated Mining and Smelting Company of Canada started work in October, with a force of men under R. B. Shelledy, on the H. C. Carry leases, upper Antler creek.

A large number of small operators at various points displayed their usual energy. In certain cases considerable ingenuity has been shown in constructing efficient plant with makeshift material and limited means. These small operations are frequently of real value in indicating what can be done by larger judicious expenditure of capital.

Omineca Mining Division.—In February, 1926, with the joint aid of the Departments of Mines and Public Works in improving the trail, G. W. Otterson endeavoured to get to Manson creek from Vanderhoof with seven sleighs loaded with new placer-mining machinery, hauled by a Fordson caterpillar tractor. Unfortunately, owing to the very mild winter and early melting snow, it was not possible to get farther than about 100 miles north of Vanderhoof. The machinery had to be left at that point, and it is understood that when fall snow permits the expedition will start again. Another attempt was made by J. Ogilvie during the summer to haul equipment in wagons over this route to Manson creek. No word has come to hand as to what success was met with.

Coal-mining.

With the aid of the Department of Mines, a number of improvements were made during the year to the road between the Goat Creek Colliery of Telkwa Collieries, Limited, and Telkwa, a distance of 5½ miles. This enables shipments to go forward by motor-truck instead of by sleighs as heretofore, and, it is hoped, will enable the colliery to operate the year round. A small force of men on development yields sufficient coal to supply the local market. The output for the year was 1,260 long tons.

The Peace Canyon Mining and Transportation Company, Limited, is engaged in developing the Gething coal leases at the Rocky Mountain canyon on the Peace river. The Dominion

Government has, it is understood, promised assistance in clearing the channel in the canyon up to the company's bunkers, and when this is done it is hoped that it will be possible to commence shipments to Peace River, which is served by the Edmonton, Dunvegan & British Columbia Railway.

Production.

Lode Mineral.—The following is a list of the shipping properties in District No. 2 and their outputs for the year 1926:—

Name.	Ore mined.	Gold.	Silver.	Lead.	Zinc.
	Tons.	Oz.	Oz.	Lb.	Lb.
Henderson	1,678	283	232,875	611,136	503,295
Fiddler group	97	81	446	7,259	.....
Silver Cup	60	.....	5,700	27,000	.....
Hazelton View group	25	75	.....	.....	.....
Seel	1	.....	32	236	.....
Totals	1,861	439	239,053	645,631	503,295

Placer.—The placer output of the district for the year 1926 was 17,355 oz. gold, valued at $295,028, as compared with $210,098 in 1925.

Non-metallic Minerals.—A shipment of 120 tons of silicate of alumina to Vancouver was made from a deposit on Borland mountain, near Williams Lake, by B. A. Cunliffe.

Coal.—The output of coal was 1,260 long tons, all from the Telkwa Collieries, Limited.

Roads and Trails.

Very generous assistance was given during the year by the Department of Mines in connection with the construction of roads and trails at all points of the district.

While the most sympathetic attitude is evinced by the Department of Mines in the matter, applicants are urged to bear in mind that funds available under the "Mines Development Act" are comparatively small, having regard to the demands upon them. Further, while new and promising sections in this district have been opened up during the year as the result of assistance given, there are many other promising sections throughout the Province generally. All such are entitled to, and must receive, due consideration.

Among the major items in connection with grants for roads and trails may be mentioned the following:—

Peace River Mining Division.—Road to coal property of Peace Canyon Mining and Transportation Company.

Omineca Mining Division.—Trail to General Holding Company's mica property on Mica mountain, Fort Grahame; sleigh-road from Vanderhoof north towards Manson Creek; Nine-mile Mountain road from Hazelton; road from Smithers to Hudson Bay mountain (Duthie Mines road); road from Telkwa to Telkwa Collieries, Limited; trail from Kimsquit towards Tesla mountain.

Cariboo Mining Division.—Hixon Creek road; Cunningham Creek road.

Quesnel Mining Division.—Road from Likely to Cedar Creek; main road, Likely to Keithley.

In the majority of cases expenditures were for repairs or improvements to existing roads or trails.

In addition to the foregoing, assistance was given in connection with numerous trails throughout the district.

New Discoveries.

In so far as they have been examined, a full report of all new discoveries will be found in the body of this report. Mention of them is here made to facilitate reference.

The most important discovery of the year is the *Red Top* group at Topley, a mineralization of essentially silver and gold values. The deposit of galena at the *Ferguson* group, on the Ingenika river, and H. Ravenal's discovery of mica on Mica mountain are also to be considered as important. Besides these may be mentioned a showing of tungsten ore (scheelite) at the *Red Rose* group, Rocher Déboulé mountain. There has also been reported the discovery of a

bed of volcanic ash 7 miles from Engen (a station on the Canadian National Railway about 12 miles west of Vanderhoof). This has not been examined.

PROSPECTING.

In the Annual Reports for the years 1917, 1921, and 1923 very full general information will be found on the subject of prospecting, likewise a detailed account of the physiographic and geologic features of the district. These reports should be carefully studied by those interested. Information of the utmost value will also be found in "Geology and Economic Minerals of Canada," by G. A. Young, published by the Geological Survey of Canada. The discovery at Topley is an outstanding example of what may be found in areas more immediately adjacent to transportation. The importance of thoroughly prospecting such before going farther afield has been very frequently mentioned in these reports, and it is desired to again emphasize this.

It is highly advisable to take immediate advantage of the clues afforded by the developments and discoveries of the past season, which clearly indicate the importance of two regions, namely:—

(1.) That portion of the Nechako plateau lying between Babine lake, from Newman peninsula to the south end and the Canadian National Railway, an area of upwards of 2,000 square miles.

(2.) The Pre-Cambrian strip in the Rocky Mountain trench in the centre of which is Fort Grahame, on the Finlay river.

Both regions are important, but the first mentioned possesses the enormous advantage of comparative nearness to transportation, and is, moreover, approximately level. The second mentioned is very severely handicapped by its great distance from a railway-line and entire absence of communication facilities, other than existing waterways, which leave much to be desired.

Too much attention must not be paid to the exact definition of boundaries as given above. Promising indications must naturally be followed. Thus, in No. 1 area for some distance north of the lake would appear to be promising, likewise perhaps also for a certain distance south of the railway-line.

No. 1 area is composed largely of Tertiary volcanic rocks with some sediments and intrusions of batholithic rocks. It is a plateau lying at an elevation of about 3,000 feet and dissected by numerous dry gullies and some creeks, but not to any great depth. It is in many regions, as near Topley, heavily overlain by glacial drift, which probably reaches a depth of 30 or 40 feet in places, and perhaps may be even deeper. It should be understood that the western boundary of the Nechako plateau, north of the Canadian National Railway, is given very closely by a line drawn due north through Houston to the 55th parallel of north latitude, which parallel forms the northern boundary of the plateau, which extends easterly to the Rocky mountains. The *Red Top* group near Topley is well within the plateau.

It would appear highly advisable to prospect the region within, say, 10 miles of the *Red Top* group intensively, in the hope of discovering a similar showing. While this region is heavily overlain with glacial drift, there are creeks and gullies which should be sought for the same kind of rock in which the *Red Top* mineralization occurs. It may be useful to remember that the trend of mineralization is approximately N. 45° W. (mag.), but of course the width is quite unknown. In this more or less local search for a particular kind of rock, in contradistinction to a general search throughout the entire region described, one fact is worth noting. Andesite and baser volcanic rocks outcrop to the east and south of the *Red Top* group, wherefore it may be assumed that the sought-for rock is most likely to be found to the west and north of the *Red Top* group. For this reason, Mackaboy creek, about 1 mile east of Perow and perhaps 6 miles west of Topley, is a good starting-point, as rocks are well exposed on both sides. It might also be noted that batholithic rock (granodiorite) outcrops on the *Beaver Dam* group, on the West fork of Findlay creek. This group is also known as "Findlay's Discovery."

Considering the question of a general prospecting of the entire area described: Access to the region is given by two wagon-roads, which run from Canadian National Railway points in a northerly direction to Babine lake, one from Topley to the mouth of the Fulton river and the other from Burns Lake. A boat or canoe obviously affords a ready means of examining the south and north shores of the lake.

The prospector should consider the outcrops of batholithic (granitic) rocks as his beacon-lights, for it is in the vicinity of the contact of such with the volcanics that mineralization is

most likely to be found. Much time, therefore, should be saved by a fairly rapid preliminary prospecting with a view to locating such batholithic intrusions as are not already known. The finding of any such should of course be followed by a closer search in the more immediate vicinity for actual showings of mineral. During the preliminary search a sharp outlook should be kept for any exposures of the same kind of rock in which the *Red Top* mineralization occurs. Prospectors will do well to first of all have a look at the exposures of this rock on the *Red Top* group.

The mantle of glacial drift must not deter close search, because the country has been heavily glaciated and only the stumps of mountains are left, which are largely covered with drift. From such outcrops of batholithic rocks as are known it seems entirely reasonable to suppose that if the mantle of drift were removed a region of general geologic promise would be disclosed. But very obvious or prominent outcrops must not be expected and more than casual scrutiny will be required. This region would also appear to offer a field for electrical prospecting.

It will be helpful to enumerate the localities in the region where outcrops of batholithic rocks are known to occur. The largest known outcrop is at the south end of the lake, extending from the north shore for some considerable distance inland. About half the surface of Silver island (about 9 miles from the south end of the lake) is composed of a dark-green coarsely crystalline diorite. Outcrops of batholithic rock are also said to occur on the north shore of the lake at various points between the south end and Wright's bay. McDonald island (about 12 miles north-west of Wright's bay) is largely composed of batholithic rock. There is also an outcrop on the extreme western border of the Nechako plateau, about 20 miles due north of Houston and a few miles back from the south shore of the lake. Finally, there is the outcrop previously mentioned on the *Beaver Dam* group, somewhere about 3 miles west of the *Red Top* group. It should be understood, of course, that these eruptive batholithic rocks are to be regarded as the sources of mineralization in the region.

It may also be of assistance to mention the points in the area at which showings of mineral are known to occur, in addition to Topley.

On Newman peninsula (chalcopyrite and zinc-blende); on McDonald island (copper minerals); opposite Marble point, some 3 miles back from the shore of the lake (galena); on Silver island (Silver Island Mining Company, silver minerals); on Anderson creek (Taltapin Mining Company, silver-lead-zinc); *Lakeview* group (formerly *Three Lakes* group), 5 miles north of Knockholt (chalcopyrite); just south of Decker Lake, *Golden Glory* and adjoining claims (chalcopyrite, with some zinc-blende). Somewhat south of the described region, but in one well worth prospecting, are the *Silver Queen*, *Diamond Belle*, and *McLean* groups in the vicinity of Owen lake, 28 miles south-west of Houston. The minerals on these three last-mentioned properties are chalcopyrite, zinc-blende, and galena.

In brief, here is an area, reasonably adjacent to transportation, containing numerous outcrops of batholithic rocks, which is likely to well repay the persistent search necessary owing to the mantle of glacial drift. It is also worthy of note that it contains, from all accounts, an ideal site on the Fulton river for the development of hydro-electric power of very considerable amount.

It is not a digression to remark that black-flies and mosquitoes are particularly bad in this region, especially during the period June 15th to August 10th. Prospectors are warned not to come into this region without a plentiful supply of "fly dope." A fly-proof tent is likewise essential.

A detailed account of the No. 2 area—namely, Pre-Cambrian strip near Fort Grahame—and of the means of ingress and egress will be found under "Fort Grahame Section." It is here merely desired to point out that it is a very promising region in which to prospect for lead-zinc deposits, mica, and probably for asbestos also. There is also a large area to the west and south-west of this strip which is obviously to be considered as of great general geologic promise. Unfortunately this region is very severely handicapped owing to its inaccessibility and lack of transportation facilities. Indeed, under present conditions, the operation of a base-metal mine would appear to be well-nigh hopeless. It is of course quite possible that development of a base-metal property might disclose such promise as to warrant, in conjunction with other considerations, railway transportation. Indeed, the prospects of discovering a large surface showing of galena and zinc-blende are distinctly hopeful, owing to the analogy between this area

and that in East Kootenay, which has produced the famous *Sullivan* and other lead-zinc mines of that district.

The outlook, so far as the operation of a mica-mine under present conditions is concerned, is much more promising. The product to be shipped out is relatively light and recent discoveries demonstrate that prospects of discovering mica of commercial grade are distinctly good. Mica discoveries so far have been on Mica mountain, just west of the Finlay river in the more immediate vicinity of Fort Grahame, in biotite mica-schist interbanded with gneissic rocks.

Freight and Smelting Rates.

The attention of prospectors and all interested is especially drawn to the fact that highly favourable railway freight and smelting rates now prevail. Particulars of the recent reduction of railway freight rates is given in the "General Summary" at the commencement of this report. In connection with the fact that the Consolidated Mining and Smelting Company of Canada, Limited, now accepts concentrating-ores, information as to the method of settlement will be found on page 120 (bottom of page) of the 1925 Annual Report.

The smelting schedule for lead ores is especially favourable in the case of ores of high silica or lime content and of low sulphide content, containing main values in precious metals. In such cases the smelting rate generally works out at about $5 a ton. In certain cases special rates are quoted, as, for instance, the ore from the *Fiddler* group, Dorreen. This ore consists essentially of quartz, with small percentages of galena and blende and main values in gold. Calculated strictly according to schedule, the smelting rate would be $4.75 a ton. A flat rate of $3 a ton was recently given the operators by the Consolidated Mining and Smelting Company of Canada, Limited. This rate is believed to constitute a low record for lead ores.

It is evident, therefore, that both in transportation rates and smelting rates every encouragement is being given to the mining industry. It is hoped that these favourable conditions will be the means of stimulating many prospectors and small-scale operators to make an effort to ship. Many small high-grade properties can be operated by the owners far more cheaply than by a company.

Note re "Gross Value."

It is apparent that statements setting out the "gross value" of ores expressed in dollars and cents are the cause of much misunderstanding and erroneous ideas. It is quite natural for those unfamiliar with ore valuation to assume that by deducting the combined freight and smelting rates (usually known fairly closely) from "gross values" the net value of the ore to the owner is arrived at. Such is far from being the case. Almost without exception, statements showing "gross values" are computed on the basis of New York lead quotations and St. Louis zinc quotations, and are mainly of use for statistical purposes. They can very rarely indeed be applied in ore valuation. In this country smelting and treatment rates are based upon London lead quotations less 1¼ cents a pound in the case of lead ores, and upon London spelter quotations less 2½ cents a pound in the case of zinc ores. Further, it must be borne in mind that smelting rates also depend upon analyses; each ore differs in this respect; consequently the smelting rate varies in each case.

In the case of concentrating-ores it is usually only possible to make an intelligent guess at values until an actual milling test has been made, because it cannot be foretold with accuracy what respective percentages of precious metals present will be found in each class of concentrates made, and the value of precious metals expressed in dollars and cents depends upon the class of concentrate containing these precious metals.

Statements showing *ultimate* gross values, such as those referred to, might properly be qualified by the endorsement: "For statistical purposes only. Not to be used for ore valuation." Those wishing to have values shown in percentages and ounces to the ton on assay certificates, translated into dollars and cents, are advised to communicate with the Resident Engineer.

Addresses.

During the winter addresses are usually given at various centres throughout the district on matters connected with developments and prospecting, for the purpose of disseminating information helpful to prospectors and others interested in mining in the district.

OMINECA MINING DIVISION.

Skeena Section.

Zymoetz (Copper) River.

Dardanelles. This property, situated on the Zymoetz river (or Copper river, as it is locally known), 14 miles from Copper City, is owned by A. Carmichael, who reports favourable results from the season's work. An account of this property will be found in the Annual Reports for the years 1914, 1918, and 1921.

Snowflake. This property is situated at the head of the Kitnaiakwa river, some 40 miles from Copper City. The owner, J. Gabriel, reports having worked on his property during the year. An account of this property will be found in the Annual Report for the year 1921.

Vanarsdol.

Silver Bow. This group is situated on Kleanza mountain at an elevation of about 2,000 feet, and was the scene of a discovery of a small vein of mixed galena and blende, of good silver grade, last year. Since then the owners, W. E. Vanmeter and A. Clore, have sunk a shaft 25 feet deep, with unfortunately disappointing results, the more solid sulphides showing near the surface becoming more scattered and finally pinching out almost entirely at the bottom, at which point a crosscut was run out from the hanging-wall a distance of 16 feet. There is every indication that slight faulting has taken place, and that if the shaft were continued downwards with a slight offset to the hanging-wall of perhaps 8 feet, vein and ore might be picked up again. The owners were advised to do this, but it is not known whether they did so or not. A description of this property will also be found in the Annual Report for 1925.

Terrace. This group, owned by Geo. Little, is situated on the south side of the Skeena river, about 1½ miles from Vanarsdol, on the slope of Kleanza mountain facing the river. Showings are at an elevation of approximately 1,400 feet, or 1,150 feet above the river. The property lies just south and somewhat below the *Silver Bow* and *Silver Cliff* groups, which latter again lie just south of and below the *Valhalla* group. The foregoing all lie at or in the immediate vicinity of the contact of the Coast Range granodiorite with the volcanics of the Interior. The showings on the *Terrace* group lie wholly within the coastal batholith.

At the time of inspection (in March) there was exposed at an elevation of some 1,400 feet, by means of a small shaft and surface-stripping, a quartz vein some 18 inches in width, fairly well mineralized with galena and blende. The strike of the vein is N. 35° W. (mag.), with flat dip of from 20° to 30° to the north-east. Some 50 feet or so vertically below this exposure a crosscut tunnel is run from the surface a distance of 75 feet in batholithic rock with the view of penetrating the vein. The latter had not been met with and the crosscut had been discontinued at the time of inspection. A draw within a very short distance of the crosscut would appear to render crosscutting unnecessary at this horizon, inasmuch as the vein must cross this draw, if it exists. The side of the draw should be prospected to ascertain this latter point.

Samples taken of selected pieces of galena and zinc-blende showing on the surface disclosed low silver values. Assays were as follows:—Selected piece of zinc-blende: Gold, trace; silver, 0.4 oz. to the ton; lead, 0.5 per cent.; zinc, 50 per cent. Selected piece of galena: Gold, trace; silver, 5.2 oz. to the ton; lead, 28 per cent.; zinc, 10 per cent.

A region of general geologic promise, nearness to transportation, and low elevation are factors which justify search by the owner for other and more encouraging showings of mineral. It is strongly advised that no deep development be attempted until the surface has been more thoroughly prospected. The vein already exposed might well be followed up, if possible, on the surface in the hope that mineralization will be more favourable at some other point. An excellent small cabin has been erected by the owner on the property.

Usk.

Cordillera.—On this property, owned by the Kitselas Mountain Copper Company, a drift was run south on the No. 2 blind vein for 100 feet, with, it is stated, promising results.

Valhalla.—Under the supervision of J. Willman, four men were employed at this property during the summer and some 42 feet of drifting was accomplished.

On the *Lucky Jim*, *Marcena*, and *Diadem* groups a certain amount of work was carried out by the respective owners. For descriptions of these properties *see* Annual Reports for the years 1923 and 1925.

Chimdemash Creek.

The owners of the *Silver Chloride* group in the O.K. range, E. Drake and J. Hamblet, report promising results from the year's assessment-work.

On the *Silver Basin* and *Silver Crown* groups J. D. Wells, owner, performed assessment-work, as did also A. A. Stewart on the *Coffee Pot* group. Descriptions of the three last-mentioned properties will be found in the Annual Reports for 1923 and 1925.

Legate Creek.

There are mineral-showings of promise on various properties at the head of this creek. A fairly full description of these will be found in the Annual Report for 1925. Pacific, a divisional point on the Canadian National Railway, is the town from which all Legate Creek properties may be readily inspected. An excellent pack-trail 12 miles in length, with a grade of but little over 100 feet of rise to the mile, leads to the head of the creek from the south side of the Skeena river, which is crossed by ferry.

No developments of importance have been reported during the present year. It is understood that the *Zona May* group was inspected by representatives of the Hooper-Davis Syndicate.

Seven Sisters Mountain.

Seven Sisters. This group, owned by Steve Young and distant 8 miles from Cedarvale, on the Canadian National Railway, was taken under option late in the season by D.W. Mines, Limited. Governor D. W. Davis, of Washington, D.C., is president; Frank F. Maxwell, of Washington, D.C., is secretary-treasurer; and S. W. Taylor, of Prince Rupert, B.C., is assistant secretary. With the aid of the Department of Mines, improvements were made in connection with the trail from Cedarvale. Winter quarters to accommodate a small force of men were erected on the property and preparations were made to operate all winter.

A description of this property will be found in the Annual Report for 1925. There is disclosed on the surface mineralization of nice clean galena with pyrite, pyrrhotite, and zinc-blende, showing high silver values in the galena. This augurs well for future development and the type of mineralization is such that it may be expected to continue to considerable depth.

Fiddler Creek.

Fiddler. Work at this property was resumed during September by J. W. Tredway with a force of three men. Operations were confined entirely to stoping from the surface above No. 1 tunnel and shipping a hand-sorted product. Unfortunately, after barely two months' work, operations had to be suspended owing to the bad condition of the wagon-road entirely preventing hauling. In this short space of time, with a force of only four men in all, the small aerial tram on the property was overhauled and equipped with a steel cable, and upwards of 100 tons of hand-sorted ore was mined, hauled to Dorreen, and shipped. A commendable achievement and an example of what the owners of many properties can accomplish.

The character of this ore is essentially quartz with small percentages of galena, zinc-blende, and a very little copper pyrites. The principal values are in gold. Smelter returns of the first car shipped (35 tons dry weight) showed the following assay results: Gold, 1.28 oz. to the ton; silver, 5.3 oz. to the ton; lead, 6.1 per cent; zinc, 3.8 per cent. Returns of remaining cars are not known at present. The very favourable smelting rate of $3 a ton flat was given by the Consolidated Mining and Smelting Company of Canada. A full account of this property will be found in the Annual Reports for the years 1916 and 1925.

HAZELTON SECTION.

It is a matter for very keen regret that the *Silver Standard* mine remains inoperative year after year, in spite of its very favourable situation and the favourable metal markets and freight and smelting rates now prevailing. While the writer is unable to write from first-hand knowledge, competent opinion will undoubtedly support the view that this property is likely to

well repay intelligent development. Its idleness is undoubtedly a real loss to the district and it is to be hoped that 1927 will witness the resumption of operations.

Frequent mention of properties in the Hazelton section will be found in previous Annual Reports. In the 1914 Annual Report is a very clear sketch-map. A very full account, with numerous maps, is also to be found in Memoir 110 of the Geological Survey, by J. J. O'Neill.

Nine-mile Mountain.

Small-scale operations were carried on at the *Silver Cup*, *Sunrise*, and *American Boy* properties under the direction of W. S. Harris and associates.

Silver Cup. Operations comprised stoping, development-work, and erection of a small aerial tram 1,900 feet in length from No. 2 tunnel to the camp. The ore shipped was obtained from the foot-wall of No. 1 tunnel and also from an intermediate level 34 feet (on the pitch of the vein) below No. 1 tunnel. Development-work comprised the connection of the intermediate level with Nos. 1 and 2 tunnels by raises.

Sunrise. Development-work has been carried on at this group, consisting of the driving of a crosscut tunnel to penetrate the main surface showing at a depth of about 250 feet. This crosscut has been driven a distance of 400 feet and it is proposed to continue it another 300 feet. A small portable gasolene-driven air-compressor has been taken to the property for the purpose of continuing the crosscut with an air-drill. Al. Harris is in charge of operations, which will be continued during the winter.

American Boy.—The main shaft on this property was sunk a distance of approximately 50 feet to the 300-foot level. The work was carried out by H. A. Harris under contract.

Rocher Déboulé Mountain.

New Hazelton Gold Cobalt Mines, Ltd.—Resulting from development-work carried out last year, 25 tons of ore was packed down from this property and shipped during the summer. No actual mining operations were undertaken.

Brunswick. This group, owned by J. Miller and situated at the head of Balsam creek, was described in the 1925 Annual Report. Since then no actual mining operations have been undertaken, the owner having devoted his energies to the construction of an aerial tram 750 feet in length to facilitate shipment of ore he has sacked up. Erection of the tram has involved a considerable amount of excavational work to accommodate the terminals. As usual, the owner is working hard this winter. The erection of an aerial tram single-handed during the winter on Rocher Déboulé mountain calls for the display of no small amount of ingenuity and perseverance in the face of hardship. Much credit is due J. Miller.

Red Rose. A reported showing of tungsten at this property was inspected during the year. It is situated on the north side of Balsam creek, above and adjoining the *Brunswick* group, and is owned by C. Ek and C. Peterson. The main vein, which in its lower horizons carries gold-copper values, apexes on a shoulder of the mountain at an elevation of approximately 6,400 feet, wholly in granodiorite. The vein at this elevation is at least 12 feet in width, striking N. 75° W. (mag.) and dipping south-west at about 45°. It has been exposed at two or three points over a length of perhaps 600 feet, the exposures being all at approximately the same level. Both sides of the mountain shoulder mentioned are steep and the vein passes completely through it. Where exposed at the apex the vein consists essentially of quartz. At two points, about 500 feet apart, the quartz showed quite appreciable amounts of wolframite and scheelite, but it appeared to occur in bunches and its was impossible to assign any definite width to the occurrence. A sample of selected piece of quartz showing tungsten minerals assayed 5.2 per cent. of tungstic oxide. Exposures are insufficient to form an opinion as to commercial possibilities. It is noteworthy, however, that the *Red Rose* main vein in its upper horizons can be developed by drifts from the surface. The highest tunnel in the old workings is at 5,700 feet approximately.

Full accounts of the older workings will be found in the Annual Report for 1914, and in Memoir 110, by J. J. O'Neill, published by the Geological Survey.

MacDonald Properties. The *Black Pilot*, *Long and Deep*, *Squire*, and *Katherine* claims are situated at the headwaters of Porphyry creek and are owned by Dan MacDonald. They are distant from Hazelton about 17 miles and are reached by a branch trail near the top of Mud Creek hill on the Hazelton–Smithers main road.

The first three mentioned claims are on the north side of Porphyry creek and the *Katherine* is on the south side of this creek. All are situated in the immediate vicinity of the contact of the granodiorite batholith with the volcanics of the Hazelton series. Injection tongues from the batholith outcrop on the *Black Pilot*. In one of these tongues were noted small veinlets, about an inch or so in width, of arsenopyrite.

On the *Black Pilot*, at an elevation of 5,000 feet, a shaft is sunk at an angle of about 20° in a northerly direction (mag.) to a depth of 45 feet, following an iron-stained seam about 2 feet in width. The country-rock is andesite. The owner expected that values in tin would be found in this seam, but assays of samples taken both by the owner and writer failed to show any tin or any values in gold or silver. Assay of a sample of arsenopyrite taken from a veinlet in one of the batholithic tongues referred to assayed: Gold, 0.18 oz. to the ton; silver, 0.03 oz. to the ton.

It might be mentioned that traces of tin were found in ore from the *Delta* group on this mountain by J. J. O'Neill, and it is quite possible that similar traces might be found at other points, but this would appear to be purely a matter of scientific interest.

On the *Katherine* claim there is exposed at an elevation of 3,900 feet on the steeply sloping south bank of Porphyry creek a shear-zone about 6 feet wide in andesite. The strike is N. 45° E. (mag.), with steep north-westerly dip. The filling is mainly country-rock with seams of barytes and very small amounts of zinc-blende. Some selected pieces of the latter assayed: Gold, trace; silver, 1.5 oz. to the ton; zinc, 9 per cent. At the request of the owner this sample was assayed for tin, but showed no trace of this metal.

None of the showings on these claims is very encouraging. At the same time the region is undoubtedly of general geologic promise.

Brian Boru. This group consists of nine claims, of which two are Crown-granted, and is owned by J. Creagh and J. Dunbar. It is situated at the head of Brian Boru creek, Rocher Déboulé mountain, and is distant between 11 and 12 miles from Skeena Crossing Station on the Canadian National Railway. The property is reached by following the Rocher Déboulé wagon-road up from Skeena Crossing for a distance of about 6 miles at which point a trail some 4½ miles in length follows Brian Boru creek up to J. Creagh's cabin, which is situated at an elevation of 3,860 feet on the South fork of Brian Boru creek. This cabin and upwards of 2 miles of new trail, which diverges from the old trail near the forks of the creek, were constructed this year by J. Creagh. This cabin is situated at a convenient point, whence the *Brian Boru* group and the newly discovered *Killarney* claim can be readily inspected.

Brian Boru creek has two forks of approximately equal length, which unite to form the main creek about 1½ miles from their heads. At the head of each fork is a glacial cirque or basin. These two basins, which are known respectively as the North and South basins, immediately adjoin and are separated only by a comparatively narrow spur which runs out from the main mountain. The two forks of the creek are likewise known as the North and South forks respectively, and it may be noted that formerly a cabin was constructed at the head of the North fork, up which a trail was built. This camp has now been abandoned in favour of the more convenient South Fork cabin and route thereto described.

The most important mineral-showing on the property has been exposed by natural agencies on the steep south slope of the North basin in the stratified volcanics. A red-stained band of rock, averaging perhaps some 10 feet in width, extends in a north-easterly direction for some hundreds of feet and forms a prominent feature of the landscape. The sides of the basin are precipitous in places and access to the mineralization cannot be gained at all points. Where accessible, the mineralization appears to consist largely of massive zinc-blende and pyrrhotite, shown by assay to be of low silver content. At an elevation of 5,250 feet there is exposed a width of 4 feet of solid zinc-blende and pyrrhotite and iron pyrites, a sample of which was found to assay: Gold, trace; silver, 5.2 oz. to the ton; lead, *nil;* zinc, 20 per cent.

The strike of this mineralization is north-easterly and the dip to the north-west at flat angles, not over 10° in places. Close to the point at which the above sample was taken a crosscut has been run a distance of 30 feet, passing through the mineral and for some distance into the foot-wall.

The rocks composing this spur have been classified by the Geological Survey as "stratified fine- and coarse-grained volcanics, with some flows." The mineralization appears to occur either at or near the contact of andesitic volcanics with rhyolitic volcanics, the former occupying the

upper portion of the spur and the latter the lower portion. The latter appear in places to be sparsely pyritized over considerable widths, but the trend of mineralization is indefinite. In this region, at an elevation of 4,900 feet, a sample of rhyolitic volcanic rock was taken over a width of 8 feet, which assayed: Gold, trace; silver, 2 oz. to the ton. At 4,800 feet elevation a tunnel has been run a distance of 75 feet in the rhyolitic volcanic in a southerly direction without disclosing anything of importance.

On the north slope of the South basin there is another exposure of zinc-blende at an elevation which suggests, as the owner thinks likely, that it may be the apex of the vein exposed in the North basin and above described. This is a point worth bearing in mind by examining engineers. It may be noted that this mineralization occurs within about half a mile of outcropping granodiorite.

Time did not permit of inspection of certain other ore-exposures in the South basin, which have apparently no connection with that above described and which are understood to be of relative minor importance. One small vein at an elevation of 5,275 feet in the South basin was, however, inspected. It occurs in andesitic volcanics, strikes N. 50° E. (mag.), dipping northerly, and is exposed by an open-cut. A sample of picked ore assayed: Gold, trace; silver, 21 oz. to the ton; lead, 12 per cent.; zinc, 8 per cent. It is said that this vein can be traced on the surface for a considerable distance. It is stated that there are exposures of arsenopyrite on this property. Time did not permit of inspection.

The *Brian Boru* group exhibits a strong exposure of zinc blende-pyrrhotite ore of low silver content, and as such is commended to the attention of examining engineers. The property is reasonably accessible to the Canadian National Railway, possesses abundance of mine-timber, and a useful mine water-power can be developed on Juniper creek. Mention of this property, and also maps, will be found in the Annual Report for 1914 and also in Memoir 110 of the Geological Survey.

Killarney.

The discovery on this claim was made by the owner, J. Creagh, during 1926. Exposures are within a few minutes' walk of the cabin on the South fork of Brian Boru creek. At an elevation of 4,125 feet on the left bank of the South fork of Brian Boru creek a number of open-cuts have been made by ground-sluicing what may be described as a steeply inclined muskeg fairly well timbered. These cuts extend over a distance of several hundred feet and disclose a superficial deposit of clay about 2 or 3 feet thick, which probably results from decomposition of underlying volcanics. Practically all cuts show small pieces of float consisting mainly of zinc-blende, pyrrhotite, pyrite, and a small amount of galena. The appearance of the float suggests that it has not travelled far and may come from a replacement deposit. Positive evidence of any mineral in place is so far lacking, but further work may disclose such and is clearly warranted. The volcanics outcrop in this region above timber-line, the strike being N. 80° W. (mag.). It is just possible that a replacement following the bedding-planes may exist below in the region being prospected, and the owner might bear this in mind.

One piece of float consisting of pyrrhotite and pyrite was found to assay: Gold, trace; silver, 2 oz. to the ton. Another piece, showing zinc-blende, assayed: Gold, trace; silver, 2 oz. to the ton; lead, *nil;* zinc, 9 per cent.

It is remarkable that this discovery should ever have been made in such a region. There appear to be no indications whatever pointing to the likelihood of its existence. It seems only possible to ascribe it to intuition on the part of the owner, to whom much credit is due for accomplishing much work single-handed.

Thoen Basin.

This basin is distant some 30 miles from Hazelton in the Babine mountains. Some work was done on the *True Fissure* group, owned by Gordon McLennan and J. A. Rutherford. Promising showings of galena and zinc-blende with high silver values are reported. A full description of Thoen basin will be found in the Annual Report for 1921.

Smithers Section.

This section has been added to the report this year. It includes all properties which are normally tributary to the town of Smithers, a divisional point on the Canadian National Railway, and situated on Hudson Bay mountain or in portions of the Babine mountains. These properties were formerly all included in Telkwa section.

Fort Grahame, B.C.

Sakumtha Pass, Kimsquit-Tesla Lake Route.

Hudson Bay Mountain.

The continued successful operation of the *Henderson* mine by Duthie Mines, Limited, has acted as a great stimulus to mining operations generally in the district. Active development of the Schufer property by the British Canadian Silver Corporation with a force of about twelve men was commenced in May and carried on until the fall, when operations were suspended for the winter.

Henderson. An average force of about forty men has been employed by Duthie Mines, Limited. Shipments for the year total 1,678 tons. An active development campaign has also been carried out, which has mainly comprised sinking a winze to a depth of 158 feet below the Compressor level, and running two intermediate drifts therefrom at points 32 feet and 131 feet respectively below the Compressor level. These distances are measured along the pitch of the vein. The winze was sunk between No. 2 and No. 3 chutes on the Compressor level; that is, at the south-western extremity of the ore region. Intermediate drifts follow the vein north-easterly. The upper intermediate had advanced a distance of 240 feet and the lower intermediate a distance of 185 feet at the end of October. The winze for the first 30 feet or so down to the level of the upper intermediate drift disclosed promising ore. The vein then flattened to 40° for the next 40 feet, then again steepened to about 60°, and mineralization improved. For the last 60 feet sunk ruby silver was persistent, although the percentage of sulphides present was not heavy. The bottom of the winze showed a promising appearance—a vein-width of 5 feet, with ruby silver quite prevalent in a somewhat sparse sulphide mineralization, the foot-wall being andesite and hanging-wall rhyolite; appearances suggested replacement mineralization at the contact of the two volcanics.

In the upper intermediate drift, in the region more immediately below No. 6 chute on the Compressor level, extremely rich ore was encountered; in one place a width of 10 inches of virtually solid ruby silver assaying several thousand ounces a ton in silver.

In the lower intermediate drift, so far, only the Fault Plane vein has been uncovered, and the foot-wall of this drift is being investigated to discover the Main vein.

As the result of developments to date, the conclusion arrived at by the management is that at the horizon of the Compressor level two veins have their junction at or near No. 6 chute, the Main vein and the Fault Plane vein. These veins diverge in a north-easterly direction. The Main vein is the foot-wall vein, with a steep, almost vertical, dip; the Fault Plane vein is the hanging-wall vein, with a much flatter dip. Ore in the former is very much better than that in the latter and stoping has been entirely confined to the Main vein.

It is evident that the method of ore occurrence at this property requires close study. The ore is "frozen" to the walls and filling and does not lend itself to stripping; consequently, until such time as a concentrator is warranted and in operation, excessive sorting by hand and slow mining are necessitated.

Schufer. This property, owned by P. Schufer and associates, is under option to British Canadian Silver Corporation, Limited. It is situated on the north-eastern slopes of Hudson Bay mountain at the head of Toboggan creek and is distant by wagon-road and trail about 9½ miles from Smithers. A good motor-road leads from Smithers to the commencement of the trail, a distance of about 5 miles.

Reference is invited to accounts of this property in the Annual Reports for 1916 and 1918. It is unnecessary to repeat in detail descriptive matter contained therein.

Important mineral-showings on this property occur on the *Iron Vault* claim. The country-rock is essentially volcanics of the Hazelton series, in which occur one or more beds of crystalline limestone. In the more immediate vicinity is an extensive outcrop of intrusive batholithic rock, determined as quartz diorite by the Geological Survey. Mineral occurrence is of two kinds:—

(1.) Bodies or lenses of zinc blende-pyrrhotite ore of low silver content outcrop strongly in a limestone-bed. The average width of the limestone-bed is about 60 to 65 feet.

(2.) A vein carrying in places galena and zinc-blende of very good grade in silver. This vein, striking N. 65° E. and dipping at about 60° to the south-east, crosses the limestone-bed, and on the surface, in the limestone, shows an outcrop of zinc blende-pyrrhotite dipping, like the vein, at about 60° south-east; whereas other outcrops of zinc blende-pyrrhotite dip north-east.

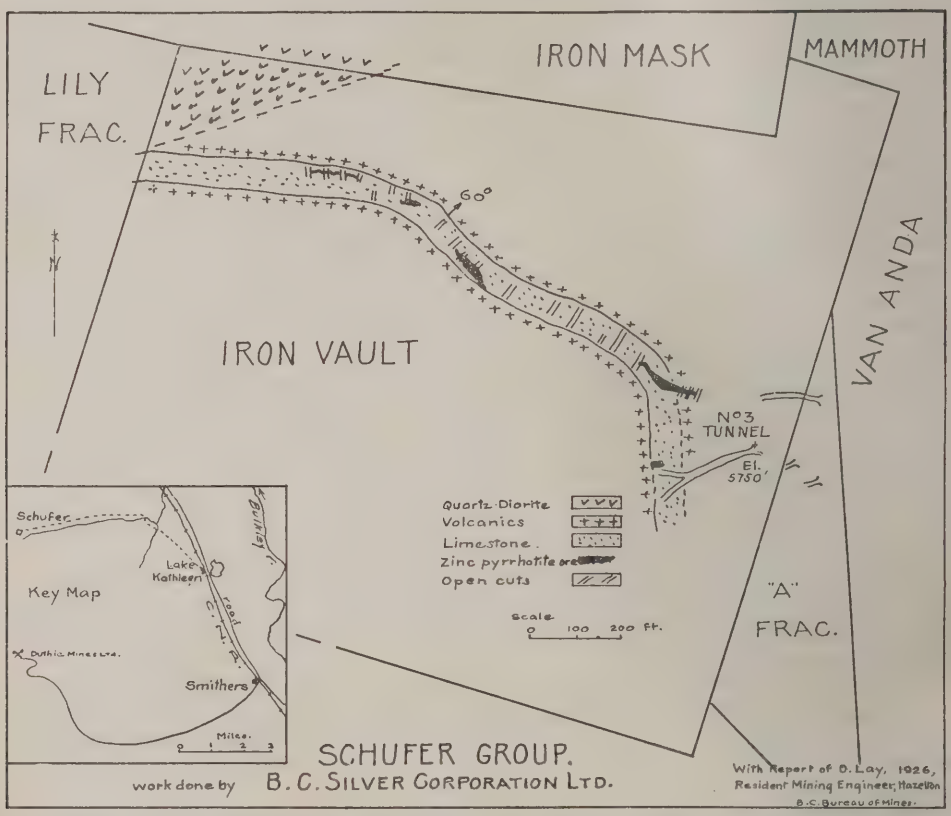
Development-work undertaken by British Canadian Silver Corporation had a twofold object:—

(1.) To ascertain the behaviour of the vein above mentioned in the limestone-bed below the zinc blende-pyrrhotite outcrop, by continuing No. 3 tunnel onward, more especially in the hope of striking shipping-ore.

(2.) To ascertain the continuity of the zinc blende-pyrrhotite outcrops by surface-trenching.

With the first objective in view, some 180 feet of drifting and crosscutting were carried out in No. 3 tunnel. The management states that there was evidence of considerable faulting and movement in the tunnel, and that the limestone encountered in the tunnel was considerably narrower than that on the surface. Early fall snows rendered it necessary to suspend operations for the winter, but it is understood that immediately before stopping a body of sulphides was encountered in this tunnel.

So far as the second objective is concerned, a large number of open-cuts on the surface demonstrates that the zinc blende-pyrrhotite ore seems likely to occur in lenses, although these



reach a width in places of between 15 and 20 feet. Unfortunately any great continuity, near the surface at any rate, was not proved.

It seems most unfortunate that the most promising ore met with in the tunnel should have been encountered at the very end of the season, when adverse climatic conditions rendered cessation of operations imperative. Reference to the accompanying map prepared from a map kindly supplied by Douglas H. Rae, superintendent, will elucidate the text.

Silver Lake.

This group consists of two claims, the *Silver Lake No. 1* and *Silver Lake No. 2*, owned by L. S. McGill and P. Schufer, and is situated at an elevation of approximately 6,650 feet and adjoining the Schufer property. On the *Silver Lake No. 2*, at an elevation of 6,650 feet, there is exposed in volcanic slide-rock a width of 3 feet of vein-matter striking N. 75° E., dipping southerly into the mountain, showing some pieces of nice clean galena. A sample of selected pieces assayed: Gold, 0.2 oz. to the ton; silver, 97 oz. to the ton; lead, 68 per cent. Proof is wanting that this vein-matter is in place, but, if not, it

probably has not travelled far. Further work in the slide-rock is required at the point of exposure. In the near vicinity is an exposure of crystalline limestone striking N. 10° W. (mag.) and dipping westerly.

On the *Silver Lake No. 1*, at an elevation of 6,475 feet, there is exposed by an open-cut and short tunnel some narrow fissures in red andesite which show copper-stains and a little bornite. It is stated that a shipment of a few tons of ore showing native silver was made from this property some years ago, when it was named the *White Heather*.

Last Chance. This group consists of four claims, owned by O. Hanson and associates, and adjoins the Schufer property. At an elevation of 5,400 feet a tunnel has been run a distance of 75 feet in the volcanic country-rock, the evident objective being the probing in depth of an exposure of chalcopyrite, pyrite, and magnetite, some 4 feet in width, about 25 feet above the tunnel. The tunnel discloses no mineral of importance and is run on a bearing of N. 15° W. (mag.), and may be in the foot-wall of the mineral disclosed above. A sample of selected pieces of the mineral showing above the tunnel assayed: Gold, trace; silver, 2 oz. to the ton; copper, 2.5 per cent. A short distance from the tunnel an open-cut some 30 feet in width discloses some irregular fracturing in the volcanic country-rock, showing a mineralization similar to that noted above. While the fractures in themselves seem irregular, the zone as a whole appears to have a possible trend of N. 75° W. (mag.). Reference to this property will also be found in the Annual Report for 1918.

Canadian Citizen. This property, situated within 2 miles of Smithers on the wagon-road to Duthie Mines, Limited, on the south-eastern slope of Hudson Bay mountain, is now owned by C. Stoughton and Ira Mitchell. A considerable amount of additional open-cutting has been done during the year. A description of the property will be found in the Annual Report for 1925.

Pine Ridge. This group consists of four claims on the south-eastern slope of Hudson Bay mountain, situated at a low elevation within 1½ miles of Smithers. It is owned by H. C. Wade. Mineralization, mode of occurrence, and country-rock are very similar to corresponding features of the *Canadian Citizen* above mentioned, which latter property lies but a short distance to the south. At an elevation of 2,150 feet several open-cuts in red andesite disclose copper-stains and a little copper pyrites. A width of 2 feet, striking approximately due north and south (mag.), was sampled, and found to assay: Gold, trace; silver, 1.2 oz. to the ton; copper, 1 per cent.

Glacier Gulch. This group is owned by S. F. Campbell and G. E. Loveless and is situated on the north side of Glacier creek, close to Lake Kathlyn glacier at the head of the last-named creek. The property is distant about 6 miles from Smithers, but a short distance from the end of the Lake Kathlyn Coalfield road. The main showings on the property are situated on the steep sides of the creek at an elevation of 2,960 feet, about 500 feet vertically above the bed of the creek. Mineralization consists mainly of zinc-blende, with small amounts of galena, and also pyrrhotite and pyrite. The mineralization follows the jointing and bedding planes of the volcanics of the Hazelton series and occurs in immediate proximity to the coal-bearing measures of the same series, the latter being uptilted sharply against the former. In one place mineralization extends over a width of between 5 and 6 feet and for a length of 20 feet, but is somewhat sparse. As a matter of interest, it might be mentioned that within a few feet of this exposure occurs a seam of highly carbonaceous schistose slate in the coal-measures. Both exposures occur in a draw and pieces of float from each are to be found side by side, the "black-jack" of the one being curiously like the compressed carbonaceous matter of the other.

A sample of selected ore from this property assayed: Gold, 0.26 oz. to the ton; silver, 2 oz. to the ton; lead, trace; zinc, 26 per cent. It is to be noted that gold values are quite appreciable.

Trixie. This claim, owned by F. Castell, is situated on the north-eastern slope of Hudson Bay mountain, on an unnamed creek flowing into Toboggan lake about 1 mile east of Evelyn. A very feeble mineralization, showing slight copper-stains occurring in decomposed sheared andesite, is exposed on the east bank of the creek for about 200 feet at an elevation of 2,105 feet. A sample of the more promising portion showed no values. A piece of siderite taken from another place was found to contain 10 per cent. zinc and 3 per cent. manganese, these two metals existing presumably as carbonates.

Vancouver.

This group, consisting of four claims and owned by F. Castell, is situated on Miller creek, on the central eastern slope of Hudson Bay mountain, and lies below the *Cascade* group. Workings are on both sides of the creek. A zone in the purple andesite breccia forming the country-rock is mineralized along lines of shearing with small amounts of galena, zinc-blende, pyrite, and a very little copper pyrites. The trend of the mineralized zone is N. 45° W. and dip about 45° to the south-west. On the east side of the creek a drift just above the creek-level, at an elevation of 2,375 feet, follows the mineralized zone for a distance of 93 feet, at which point a crosscut shows the width mineralized to be 18 feet. Unfortunately, however, this hopeful appearance did not continue, and the drift, although advanced another 115 feet approximately, showed only scattered amounts of mineral. The face appears somewhat more promising and the owner is advised to do a little more work. A crosscut at the face, for example, to establish proof that both walls of the mineralized zone have been uncovered, might be helpful. Likewise a crosscut between the first crosscut and the present face.

On the west side of the creek some crosscutting has been done to intercept the continuation of the mineralized zone, but only slight mineralization has been disclosed.

In addition to the properties on Hudson Bay mountain more particularly mentioned in this report, the respective owners of the *Evelyn*, *Yukon*, *Empire*, and *Groundhog* groups performed some work on these properties.

Discovery of Realgar.—Of interest is the fact that Paul Teckoles reported the discovery of realgar on the extreme south-eastern flanks of Hudson Bay mountain, in the vicinity of Seymour lake. The samples brought in to the Hazelton office were undoubtedly realgar. Another sample sent by Paul Teckoles direct to the Bureau of Mines assayed: Gold, *nil;* arsenic, 2 per cent. This mineral has not previously been known to exist in this district. This discovery has not yet been inspected, but samples to date indicate that it is of scientific interest rather than of commercial significance.

Liberal assistance was rendered by the Department of Mines during the year towards improvements to the road from Smithers to Hudson Bay mountain, generally known as the "Duthie Mines road."

Driftwood Creek.

An option was secured during the summer by Henry Lee Messner on several properties in this vicinity—namely, the *Silver King* group (sixteen claims), now owned by the Babine Silver King Mining Company, *Hyland Basin* group (six claims), *Victoria* group (six claims), *Silver Saddle* group (twenty-three claims), and *Little Joe* group (seven claims). Small-scale operations were started on these properties in August and continued until the fall, when, it is understood, operations were suspended for the winter on all properties except the *Silver King* group.

All the foregoing properties in the Babine mountains are reached by a motor-road about 10 miles in length to Holland's ranch from Smithers. Then follow 4 miles of sleigh-road, followed by approximately 5 miles of trail to the head of Driftwood creek, where is situated the *Silver King* group. A branch trail from this group leads to the remaining properties. Aid was given by the Department of Mines towards improvements in connection with the Driftwood Creek trail, and also towards constructing a trail up Little Joe creek from "Cronin's sleigh-road," thus affording an outlet from this property for any shipments to Telkwa.

Silver King.

Work was carried on at this property last winter with a force of four men and considerable development has been accomplished during the year. Descriptive matter contained in the Annual Reports for 1925 and previous years will not be repeated in this report. A crosscut tunnel run practically at the level of the floor of the basin has been continued a distance of 262.5 feet, accomplishing its immediate objective—namely, the penetration of the downward continuation of the vein, followed by an adit-drift at a level approximately 25 feet vertically above the crosscut. This latter drift is on the Main vein, which strikes N. 85° W. (mag.) and dips north at about 42°. The bearing of the crosscut is N. 8° W. (mag.). In running the crosscut, apart from mineralized seams of minor importance, the South vein, showing about 10 inches of quartz with sulphides, striking N. 60° E. (mag.) and dipping to the south, was struck at 207 feet. The Main vein foot-wall was reached at 258 feet and apparent hanging-wall at 262.5 feet. At the point of penetration a width of 1.5 feet of mixed galena, zinc-blende, with grey copper and native silver, was disclosed. At the end of the

crosscut a drift was run west a distance of 115 feet and east a distance of 74.5 feet. In the west drift, at 30 feet west of the crosscut, a diverging stringer was followed a distance of 15 feet north and ran into a band of quartz about 3 feet in width, more or less parallel to the Main vein. At 89 feet west of the crosscut another diverging stringer was followed a distance of 39 feet north.

The rich ore encountered at the point of crosscutting the Main vein apparently pinched out in both directions, and the length of ore-shoot at this horizon, it is understood, would not exceed about 35 feet. As a result of this drifting 105 sacks of ore, say 3½ tons, was obtained by hand-sorting. The cullings would also yield concentrating-ore. The amount of the latter is somewhat indeterminate. Samples were taken to get an idea of grade in precious metals and no undue importance must be attached to widths. Mineralization appears to be "bunchy" rather than continuous, and, as might be expected from the presence of much native silver and grey copper, values vary within very wide limits. Obviously, while the grab sample of the sacked ore is not by any means an accurate sample, nevertheless it gives a reasonably close idea of what can be done by hand-sorting this character of ore. Samples taken were as follows:—

Description.	Gold.	Silver.	Lead.	Zinc.
	Oz. per Ton.	Oz. per Ton.	Per Cent.	Per Cent.
Grab sample of 105 sacks of ore	0.40	84.0	2.0	4.0
In East drift from Main crosscut—				
15 feet east of crosscut, across 8 inches	0.16	5.5	3.0	4.0
34 feet east of crosscut, across 12 inches	0.34	5.5	.....	4.0
Face of drift, across 3.5 feet	Trace	2.6	.....	.....
Picked sample of ore showing at 54 feet east	1.20	935.0	.....	6.0
In West drift from Main crosscut—				
25 feet west of crosscut, across 7 inches	0.50	59.0	.....	5.0
In crosscut at 30 feet west of Main crosscut, across 8 inches	0.32	24.0	0.6	4.0
In crosscut at 89 feet west of Main crosscut across 9 inches	0.40	52.0	4.0	6.0
In Upper adit-drift—				
25 feet from portal, picked ore	0.16	105.5	1.0	11.0
100 feet from portal, picked ore	1.40	327.0	2.0	13.0
Sample of stringer on Republic claim	Trace	4.0	8.0	.....

The topography is such that only a very thin cover overlies the East drift from this crosscut. Moreover, appearances rather suggest that the ore met with in the drifts from the crosscut may be the top of an ore-lens. The objective would now appear to lie in probing this matter by sinking in the ore disclosed.

When seasonal conditions permit, some surface-trenching a considerable distance east of the crosscut, where the ground rises, might disclose some hopeful mineralization in the vein system, which could be followed, if appearances warranted, by drifting. The advisability of ascertaining by survey the possible position of the *Hyland Basin* vein on *Silver King* ground is also indicated.

Hyland Basin. Reference is invited to the Annual Reports for 1925 and previous years. On this group, at or near what appears likely to be the junction of two veins, there is exposed on the surface over a length of approximately 70 feet a very promising band of mixed galena, zinc-blende, and quartz of an average width of 1.5 feet. Grey copper and copper-stains are also in evidence. A sample was taken of pieces of broken ore lying in a pile alongside the open-cut, which assayed: Gold, 1.42 oz. to the ton; silver, 440 oz. to the ton; lead, 22 per cent.; zinc, 13 per cent. Such can, of course, only be regarded as an indication of the kind of values to be expected in selected ore. Nevertheless, the ore is of undoubted high grade in precious metals.

Some considerable distance from this surface showing one short crosscut and one adit-tunnel approximately parallel to the vein strike have been run. The latter is approximately 190 feet in length and crosscuts have been run from it to penetrate the vein. Some crosscutting was, it is understood, carried out in the long adit in the fall of 1926, but the vein was not struck.

The obvious objective at this property is the exploration of the surface showing described, which could readily be accomplished by sinking a shaft in it from the surface.

Silver Saddle. This group comprises a considerable amount of ground lying north of the *Victoria* group and between the latter and Cronin creek. No very impressive surface showings were seen on this group. It is, however, stated that there are some showings of promise, but time did not permit of inspection. Just north of the *Victoria* group there is exposed in andesite country-rock, close to the contact of the latter with argillites, a vein 15 inches in width showing quartz and arsenopyrite. A picked sample of this assayed: Gold, 0.60 oz. to the ton; silver, 10 oz. to the ton.

Victoria. A full description of this property will be found in the Annual Report for 1918. This property suffers, unfortunately, from the fact that there is at present no outlet for shipping ore. It lies in a basin and any ore shipped at present would have to be packed for a considerable distance uphill.

Two of the veins show very considerable strength and one, the Main vein, shows mineral at various points over a length of about 2,000 feet, although mineralization is not continuous for this distance. The property presents certain points of resemblance to the Babine Bonanza Company's property (Cronin's mine). The grade of the ore in silver is quite good. At one point in the bottom of the tunnel run on the Main vein grey copper is in evidence. A picked sample of this ore assayed: Gold, 1.30 oz. to the ton; silver, 1,064 oz. to the ton. A sample taken of galena from the face of the tunnel assayed: Gold, 0.16 oz. to the ton; silver, 69 oz. to the ton; lead, 13 per cent. A sample of float from this property, where it extends into the *Little Joe* basin, assayed: Gold, 0.30 oz. to the ton; silver, 230 oz. to the ton. The grade of the sulphides in precious metals is therefore likely to be good in any ore-shoot encountered. The topography lends itself to advantageous crosscutting to the Main vein at a point about 150 feet below the present adit-tunnel. It is understood that a crosscut has been started at this point which should reach the vein in a favourable region judging from exposures on the surface above and in the tunnel.

It is somewhat of a problem to provide an outlet for transportation of ore from this property, as appearances generally suggest that it may develop into a producer of concentrating-ore rather than of ore which can be shipped direct. One solution might be afforded by constructing a road in a north-easterly direction to connect with Cronin's road and so with Telkwa, a distance of perhaps 25 miles. In any case only development could justify the expense necessary.

Little Joe. A description of this property will be found in the Annual Report for 1925. Subsequent development comprises the sinking of a winze and a further advance of the main drift. At the time of inspection, at a point 130 feet from the portal of the tunnel, a winze had been sunk a depth of 27 feet in the flat-dipping vein (dip 25°), the ore being continuous and the width at the bottom varying from 6 to 12 inches. A sample across a width of 8 inches at the bottom of the winze assayed: Gold, 0.34 oz. to the ton; silver, 126 oz. to the ton; copper, 6 per cent.

The main drift had been advanced to a point 170 feet from the portal, representing an advance of 5 feet, and was in progress at the time of inspection. It was mentioned in the 1925 Annual Report that the drift at the then face was apparently in the foot-wall, but on resumption this year no difficulty was experienced in again picking up the vein. A width of between 9 and 18 inches of ore was present in the face of the drift. A sample of this across 18 inches assayed: Gold, 0.10 oz. to the ton; silver, 20 oz. to the ton; copper, 0.2 per cent. The character of mineralization is essentially grey copper with small amounts of galena and zinc-blende in a quartz vein.

On the surface, some considerable distance from the working-tunnel and about 200 feet vertically above the latter, another promising quartz vein, a few inches in width, had been discovered at the time of inspection. A picked sample of this assayed: Gold, 2.3 oz. to the ton; silver, 94 oz. to the ton; copper, 3 per cent.

Harvey Property. An account of this property will be found in the Annual Reports for 1918 and 1925. It is understood that C. G. Harvey, one of the owners, has worked constantly all the season and that he expected to get out a shipment of ore at the end of the year. With this in view some assistance towards trail repairs was given by the Department of Mines.

Telkwa Section.

This section includes only those properties which are normally tributary to the town of Telkwa, and comprises Grouse mountain, Mineral hill, Dome mountain, Hunter basin, Howson basin, and Telkwa River properties.

Grouse Mountain.

The most important feature of developments in the Telkwa section during the year was the resumption of work on August 1st by the Cassiar Crown Mining Company (formerly Cassiar Crown Copper Company) at its property on Grouse mountain. A great deal of preliminary work, apart from purely mining operations, in the shape of erection of bunk-house, installation of power plant, and so forth, has been carried out and a considerable amount of underground development accomplished. W. G. Harris, superintendent, is to be congratulated upon quickly and successfully overcoming the many difficulties and obstacles inherent to re-establishment.

Cassiar Crown Mining Co.

Reference to the accompanying map, which also shows geology by J. D. Mackenzie, Summary Report, 1915, Geological Survey, will elucidate study of the text. Likewise, reference to previous Annual Reports will be found useful. It will be noted that the company has under option the *Lakeview* claim, owned by Louis Schorn. Mineralization is essentially zinc-blende with a certain amount of copper pyrites which occurs in sheeted zones in the water-lain tuffs, which are intruded by a number of igneous dykes, with which the mineralization is associated.

Underground work has comprised the advancement of the south-west drift from No. 2 crosscut tunnel, from the position shown on the map to the region more immediately below the very promising ore met with in No. 1 tunnel, which is 95 feet vertically above No. 2 tunnel. Some 200 feet of drifting had been accomplished by the early part of November and the drift was then in progress. In the course of drifting it was stated that mineralization was continuous and in one place a width of 4 feet of ore was met with, but in view of the strong showing on the level above, the No. 2 level did not show the expected mineralization. Inspection was made during November and a few weeks later word was received from the management that a width of 6 feet of good ore had been struck, which augurs well for future progress.

Prior to starting mining operations a small two-story bunk-house and a small office were erected. A small power plant was also installed to operate a small compressor. This consists of a 25-horse-power Fairbanks-Morse engine, using distillate oil, which costs 32 cents a gallon at the mine. This drives a 10- by 10-inch belt-driven Fairbanks-Morse air-compressor of a capacity of 135 cubic feet of free air a minute, compressing to 100 lb. a square inch pressure. One 2¼-inch mounted jackhammer air-drill is used in the mine. The cost of drifting is $17 a foot. The theoretical consumption of the 25-horse-power engine at full load is 3½ gallons of distillate an hour.

Rainstorm.

This group consists of five claims, owned by L. H. McLean and F. Dobie, adjoining the property of the Cassiar Crown Mining Company on the north. Mineralization is that characteristic of the vicinity—namely, zinc-blende, iron pyrites, and a little chalcopyrite, following the bedding-planes of andesitic breccias and tuffs and striking N. 50° E. (mag.). The main point of exposure shows a width of 23 feet, although mineralization is not heavy at all points of this width. A picked sample assayed: Gold, trace; silver, 0.2 oz. to the ton; lead, trace; zinc, 13 per cent.

Solo.

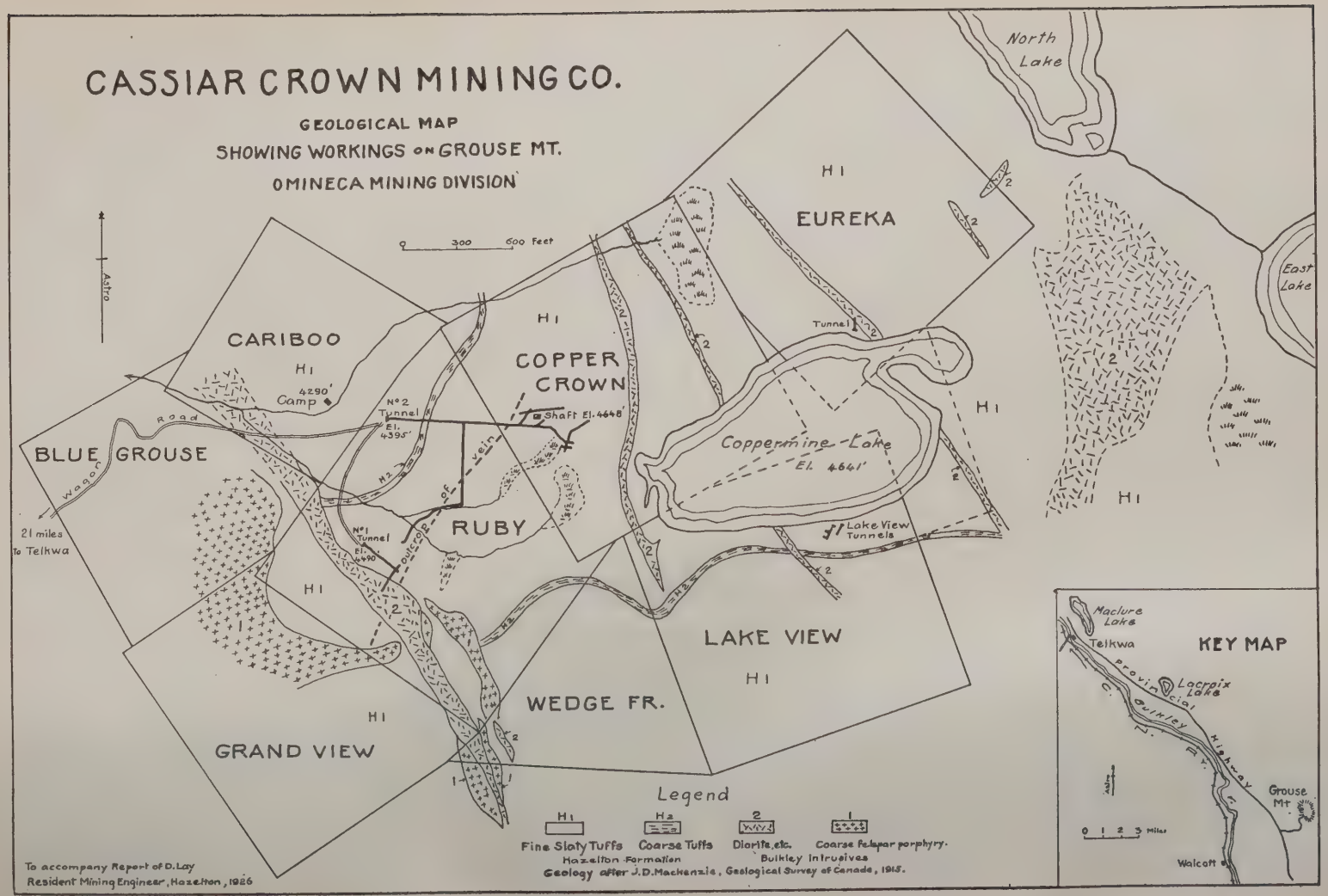
This claim, owned by L. H. McLean, is on the north-eastern slopes of Grouse mountain, overlooking Fish lake. The main showing consists of a silicified seam a few inches in width, showing zinc-blende mainly, together with a little chalcopyrite and iron pyrites, which follows the bedding-planes of the enclosing andesite country-rock. A sample of the best ore showed noteworthy gold values and assayed: Gold, 0.30 oz. to the ton; silver, 2.2 oz. to the ton; lead, trace; zinc, 26.5 per cent.

On the *Cornu Copia* and *Black Fox* properties some work was done by the respective owners.

Note.—Prospectors having claims on the north-eastern slopes of Grouse mountain might do well to follow up any indications and generally prospect in a north-easterly and easterly direction, towards the Nechako plateau, and are referred to remarks under "Prospecting" in this report.

Mineral Hill.

Mineral hill adjoins Grouse mountain on the south. Like the latter, the characteristic geologic feature is the number of igneous batholithic intrusions in the volcanic, sedimentary, and


CASSIAR CROWN MINING CO.
GEOLOGICAL MAP
SHOWING WORKINGS ON GROUSE MT.
OMINECA MINING DIVISION
North Lake
East Lake
EUREKA
CARIBOO
COPPER CROWN
BLUE GROUSE
RUBY
LAKE VIEW
WEDGE FR.
GRAND VIEW
Camp
4290'
No 2 Tunnel
El. 4395'
Shaft El. 4648'
No 1 Tunnel
El. 4490
Tunnel
Coppermine Lake
El. 4641'
Lake View Tunnels
Wagon Road
21 miles to Telkwa
Astro
0 300 600 Feet
Legend
Fine Slaty Tuffs
Coarse Tuffs
Hazelton Formation
Diorite, etc.
Coarse feldspar porphyry.
Bulkley Intrusives
Geology after J.D. Mackenzie, Geological Survey of Canada, 1915.
To accompany Report of D. Lay
Resident Mining Engineer, Hazelton, 1926
KEY MAP
Maclure Lake
Telkwa
Lacroix Lake
Provincial
Bulkley Valley
Highway
Grouse Mt
Walcott
0 1 2 3 Miles

tufaceous formation. Of especial prominence is a large outcrop of quartz-feldspar pegmatite on the *Venus* group, of more or less elliptical shape, the major axis of which trends about N. 55° E. (mag.) and which is crossed approximately at right angles at the lower portion of the outcrop by a diorite dyke striking N. 35° W. (mag.). The latter passes close to the *Venus* shaft on the upper side of it, while the quartz-feldspar pegmatite outcrop is within 150 feet of the shaft. On the *Mickey* group, which lies above the *Venus* group, is a large outcrop of the feldspar-porphyry dyke, 40 to 50 feet in width, striking S. 55° E. (mag.), which crosses Grouse mountain. Outcrops of hornblende porphyry also occur on the *Mickey* group. These igneous intrusions have undoubtedly been the causative influence in the mineralization.

The Government ranch, distant 21 miles from Telkwa by the main Provincial highway, is the point from which Mineral Hill properties can be readily reached. The ranch is just at the base of the mountain and the *Venus* group shaft is within half a mile of the ranch.

Mickey. This group is owned by E. and B. Hoops, F. Mapleton, and J. Bussinger and consists of six claims. The most important mineralization occurs on the *Suprema* claim, where two quartz veins occur about 30 feet apart. The lower vein, varying in width from a few inches up to 1.5 feet, has been exposed by an open-cut and shallow shaft, which latter was filled with water at the time of inspection. The vein shows galena, zinc-blende, copper-stains, and a noticeable amount of grey copper. The strike is N. 35° W. (mag.) and the dip easterly at about 30° to 35°. The country-rock is andesite. About 30 feet distant horizontally and higher up the hill is another quartz vein about 2 feet in width sparsely mineralized with small amounts of galena and zinc-blende, dipping in the same direction but at a steeper angle—about 50°.

The depth of the shaft is stated to be about 18 feet. The altitude of the collar is 4,025 feet. A sample of the best mineral showing in the upper vein assayed: Gold, trace; silver, 4.6 oz. to the ton. A sample of the best ore showing at the collar of the shaft assayed: Gold, 0.04 oz. to the ton; silver, 150 oz. to the ton; copper, 6 per cent.; lead, 2 per cent.; zinc, 30 per cent. The owners are advised to sink the shaft a little farther, even although, as they stated, appearances in the bottom were not as favourable as at the collar.

Other showings were inspected on this property, but none call for any special comment. In view of the near-by igneous intrusions the geology of this group is promising.

Venus. This group is owned by A. S. Miller, M. E. Lablanc, and J. Bussinger and adjoins on the lower side the *Mickey* group. Operations this year have been confined to sinking a shaft (previously sunk to 34 feet) a further depth of about 32 feet. This shaft, the collar of which is at an elevation of 2,640 feet, is in the near vicinity of igneous intrusions which have been described in the prefatory notes to this section. A vein averaging from 3 to 4 feet in width, showing a mineralization consisting of sparse amounts of galena, zinc-blende, and copper pyrites carrying quite good silver values due to grey copper, is exposed on the surface by open-cuts on either side of the shaft for a length of about 275 feet. The country-rock is either argillaceous quartzite or a water-lain tuff. Vein-filling is in part quartz and in part country-rock. At the time of inspection the shaft had reached a depth of 66 feet. Quite a promising mineralization is disclosed for the first 40 feet and then it becomes very sparse. The strike of the vein is N. 35° W. (mag.) and the pitch 60° easterly.

A sample from a few tons of ore piled at the collar of the shaft assayed: Gold, 0.04 oz. to the ton; silver, 147 oz. to the ton; copper, 6 per cent.; lead, 14 per cent.; zinc, 36 per cent.

Inasmuch as the shaft is such a short distance from the outcrop of quartz-feldspar pegmatite, it is suggested that the vein be uncovered near the latter. Very little work would be involved, as the distance is only 150 feet and there is only grass and a few inches of soil to remove to expose the underlying country-rock.

Other mineral-showings occur on this group, of which the following are the most important: At an elevation of 3,100 feet and upwards of a mile in an easterly direction from the main shaft a mineralized zone is exposed in andesite. Walls are not clearly defined, but width appears to be about 25 feet. Mineralization consists mainly of chalcopyrite and iron pyrites. A shaft, full of water, is stated to be sunk to a depth of 40 feet. It is also stated that some years ago a shipment was made from here of 20 tons of ore which assayed 17 per cent. copper and 6 oz. silver to the ton.

About 500 feet vertically above the last-mentioned exposure an open-cut exposes three small veins intersecting with a development in the smallest of specular hæmatite, copper-stains, and

probably some grey copper. A sample from this stringer assayed: Gold, trace; silver, 48 oz. to the ton. Some further work should be done at this point.

In the outcrop of quartz-feldspar pegmatite, already referred to, at an elevation of 3,125 feet, there is exposed by an open-cut a quartz vein about 4 feet wide showing a slight mineralization with arsenopyrite. The vein strikes N. 25° W. (mag.) and dips westerly. A sample of this vein showed only a trace of gold and 1 oz. silver to the ton.

Telkwa River.

Big Four. This group is situated between Milk creek and the Telkwa river. Work was done during the year by Alexander Chisholm, the owner. This consisted of 30 feet of sinking, the owner reports, being the continuation of a shaft sunk from the surface on a flat-dipping vein. It is stated that at the bottom of the shaft, between 50 and 60 feet from the collar, a vein 3 feet wide is exposed, of which a width of 1.5 feet is quartz and the remaining width is mainly galena. A sample of the latter taken by the owner assayed: Gold, trace; silver, 2 oz. to the ton; copper, trace; lead, 34 per cent.; zinc, 3 per cent. It was not possible to inspect this group, but a description will be found in the Annual Report for 1917.

Telkwa Mines. A request was received from the president of Telkwa Mines, Limited, which has been inoperative for many years, to inspect the *Duchess* and *Contention* groups, situated in Howson basin. It is regretted that it was quite impossible to do so. At the only available time the Resident Engineer went to Telkwa with the intention of making an examination, but had to abandon the idea owing to snow in Howson basin. Reference is invited to the very full information on this property appearing in the Annual Report for 1917.

TOPLEY SECTION.

This section has been added to the report this year. It includes all properties tributary to Topley, lying on the Nechako plateau north and south of the Canadian National Railway line. Topley is a station on the Canadian National Railway 58 miles east of Smithers and 32 miles west of Burns Lake. There is a small settlement here and two hotels—Covington's Hotel and McCrea's Hotel. B. McCrea has, in addition, a well-equipped store and a large stock, and can supply anything the prospector is likely to require.

A general account of the topographical and geological features will be found under "Prospecting" in this report and further details below.

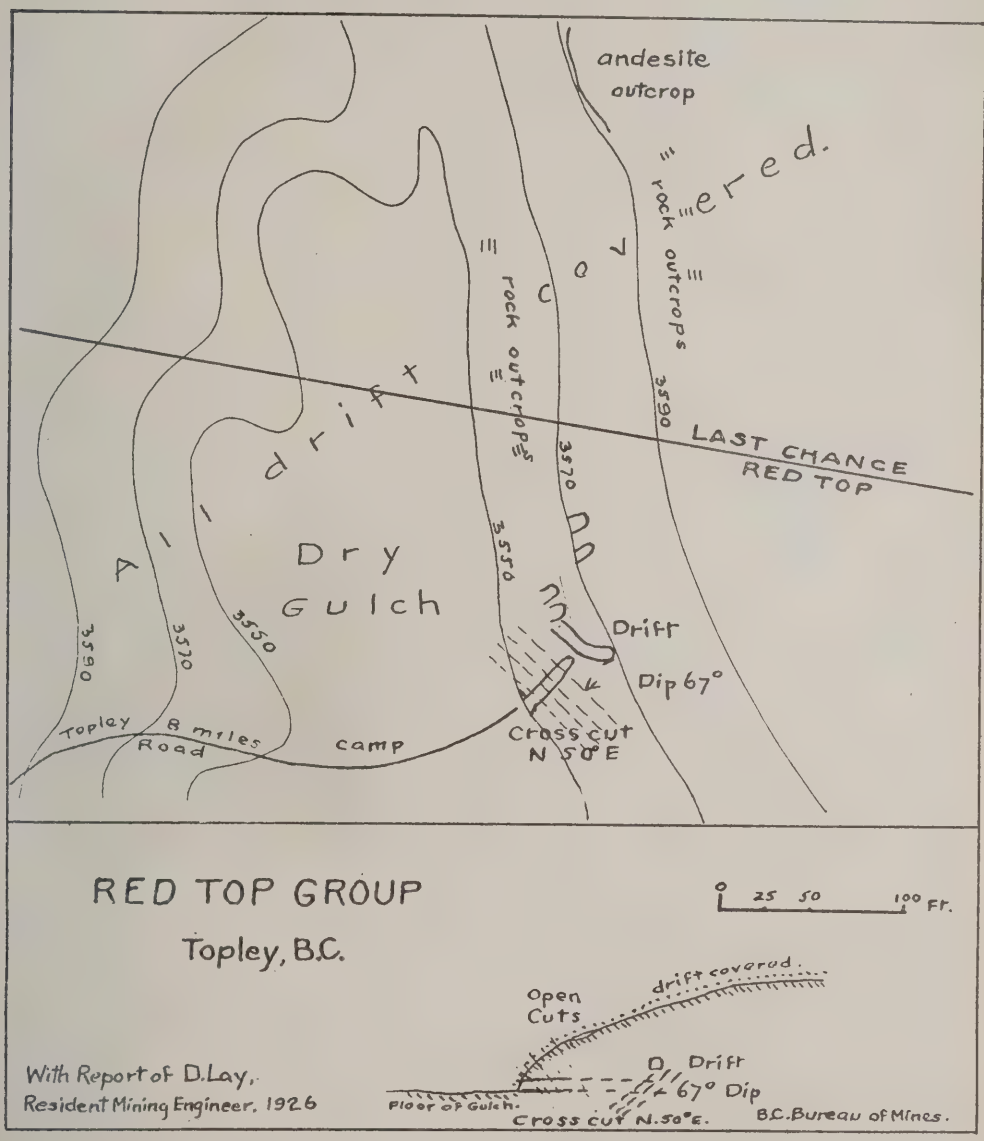
Red Top. This group, consisting of five claims and owned by F. H. Taylor and Wesley Banta, was located on June 7th, 1926. It lies at an elevation of 3,550 feet, about 1,400 feet above Topley, from which it is distant by wagon-road 8 miles. A wagon-road runs from Topley to the mouth of the Fulton river on Babine lake, a distance of about 28 miles. From this main road a branch road about 1 mile in length leads to the group, which lies almost due north of Topley.

Possessing many unique features and from the beginning showing every sign of the likelihood of real importance and possible magnitude, the discovery attracted much attention at an early date. During the months immediately following the date of discovery the group was examined by engineers of all the more important operating companies in the Province and by some from outside points.

The property is situated outside the mountain system proper on the Nechako plateau and about 15 miles east of the western limit of the latter. Particulars of the boundaries of the Nechako plateau are given under the head of "Prospecting." It is in a region covered with a thick mantle of glacial drift and with very few and small exposures of country-rock and practically none of mineral. To the discoverer, F. H. Taylor, much credit is due. His attention was attracted in the first instance by finding small pieces of float on the surface, and by digging down he discovered the mineralized decomposed rock-outcrop.

The region is composed largely of volcanic rocks, intruded in places by batholithic rocks. The nearest observed intrusion of the latter is about 3 miles north-west of the *Red Top* group, where granodiorite outcrops on the *Beaver Dam* group. The topography is flat, a rolling plateau dissected by numerous dry gulches which on the average are 30 or 40 feet deep, and some creeks, which have cut down to upwards of 100 feet in places. Findlay creek, which flows in a south-west direction about 3 miles south of the *Red Top* group, is the most important one. The

elevation of the plateau in the vicinity of this group is about 3,500 feet. About 1 mile to the east lies Black mountain and about 2 miles to the south-east is Huckleberry mountain. Both these mountains have typical rounded glaciated summits, which have an elevation of about 5,000 feet. Mineralization consists of iron pyrites and arsenopyrite, with a little galena and zinc-blende. The country-rock in which the ore-body occurs is a rather peculiar one.



Samples were taken covering the entire range of exposures on the surface and in the tunnel and submitted to Dr. Victor Dolmage, of the Geological Survey, for determination. His report is as follows:—

"All of the specimens, even the one from the tunnel, are completely altered from their original condition, unless the original rock was a dolomite, which seems unlikely in view of the geology of the general district. The analysis showed about 22 per cent. MgO, from which I conclude that there is probably much dolomite or magnesia, or both.

"The minerals which I have now identified are calcite, quartz, dolomite, zoicite, talc, sericite, and feldspar. All of these minerals, except the feldspar, are secondary, and the feldspar is present in only small amounts.

"It is quite impossible to tell from the specimens what the rock was originally, but in view of the geology of the district and the presence of a small amount of feldspar, it seems likely that it was some kind of a volcanic rock. The rounded areas filled with calcite might have been amygdules. I have never seen so much secondary calcite and dolomite in an altered volcanic rock, and in his observations on rock alterations Lindgren does not mention any such case. I might add that there is nothing to suggest what kind of volcanic rock the original was."

Chemical analysis of the above samples made in the laboratory of the Bureau of Mines, Victoria, gave the following results:—

	No. 2197A.	No. 2198A.	No. 2199A.
	Per Cent.	Per Cent.	Per Cent.
Gold	Trace	.....	Trace
Silver	Trace	.....	0.4
SiO_2	44.4	63.2	50.8
Al_2O_3	2.3	2.0	1.0
Fe_2O_3	7.1	9.7	8.0
$CaCO_3$	20.4	11.8	17.0
$MgCO_3$	17.5	5.1	15.3

Sample No. 2197A was taken in the crosscut tunnel; sample No. 2198A was taken from a surface exposure just south of the crosscut tunnel; sample No. 2199A was taken from a surface exposure about 325 feet north of sample No. 2198A. As has been mentioned, the range of exposures is extremely limited and extends over a range of about 300 feet or so only in a northerly and southerly direction. In an east-and-west direction the mantle of glacial drift covers the rock except in one or two places where a few square inches are exposed.

Commenting upon the analyses, the Provincial Mineralogist says: "These analyses show a most peculiar rock. It is safe to say that it is a volcanic of some nature profoundly altered with secondary production of lime, dolomite, and silica."

In brief, these facts demonstrate that the rock is not a rock type, and, further, that the existence of secondary rock minerals is widespread. The logical inference is that justification exists for hoping that the occurrence of valuable ore-minerals will be likewise widespread.

Unaltered specimens of this rock obtained from the crosscut tunnel show a white siliceous rock with a distinct yellowish-green cast of colour, due to extensive development of epidote. On the surface the rock appears as a tufaceous-like, fissile, heavily iron-stained rock, with an extensive development of calcite. It weathers and disintegrates where heavily mineralized, forming earthy material. The discovery was made on the side of a small gulch about 30 or 40 feet in depth, where weathering and disintegration had resulted in the formation of the earthy material described to a depth of 2 or 3 feet, and extending from the solid portions of the rock to the grass-roots. This property was inspected a few days after discovery, and a fair sample taken at this time of the earthy material was found to assay: Gold, 0.2 oz.; silver, 27 oz. to the ton; lead, trace. In this earthy material were found pieces of float, subangular, about half the size of a man's fist. These, when broken open, were seen to consist of unaltered primary sulphides with no sign of oxidation. They were not included in the sample above mentioned, because it was perceived that they might not have resulted from the underlying rock, but might have travelled some distance, although probably not far. Two such pieces of float were assayed separately. One consisted of almost entirely iron pyrites and arsenopyrite, with a very little galena and zinc-blende, and assayed: Gold, 0.7 oz. to the ton; silver, 275 oz. to the ton; lead, 2 per cent. The other piece showed a mineralization of mainly galena and assayed: Gold, 0.84 oz. to the ton; silver, 387 oz. to the ton; lead, 36 per cent. Such high assays have not been even approached by any taken from the crosscut tunnel and their significance and importance will be fully discussed later.

At a point about 300 feet to the north of the discovery a small outcrop, a few square feet in area, of the tufaceous-like (on the surface only) mineral-bearing rock occurs, but samples of this showed only traces in precious metals. At a few points between 300 and 500 feet in an easterly

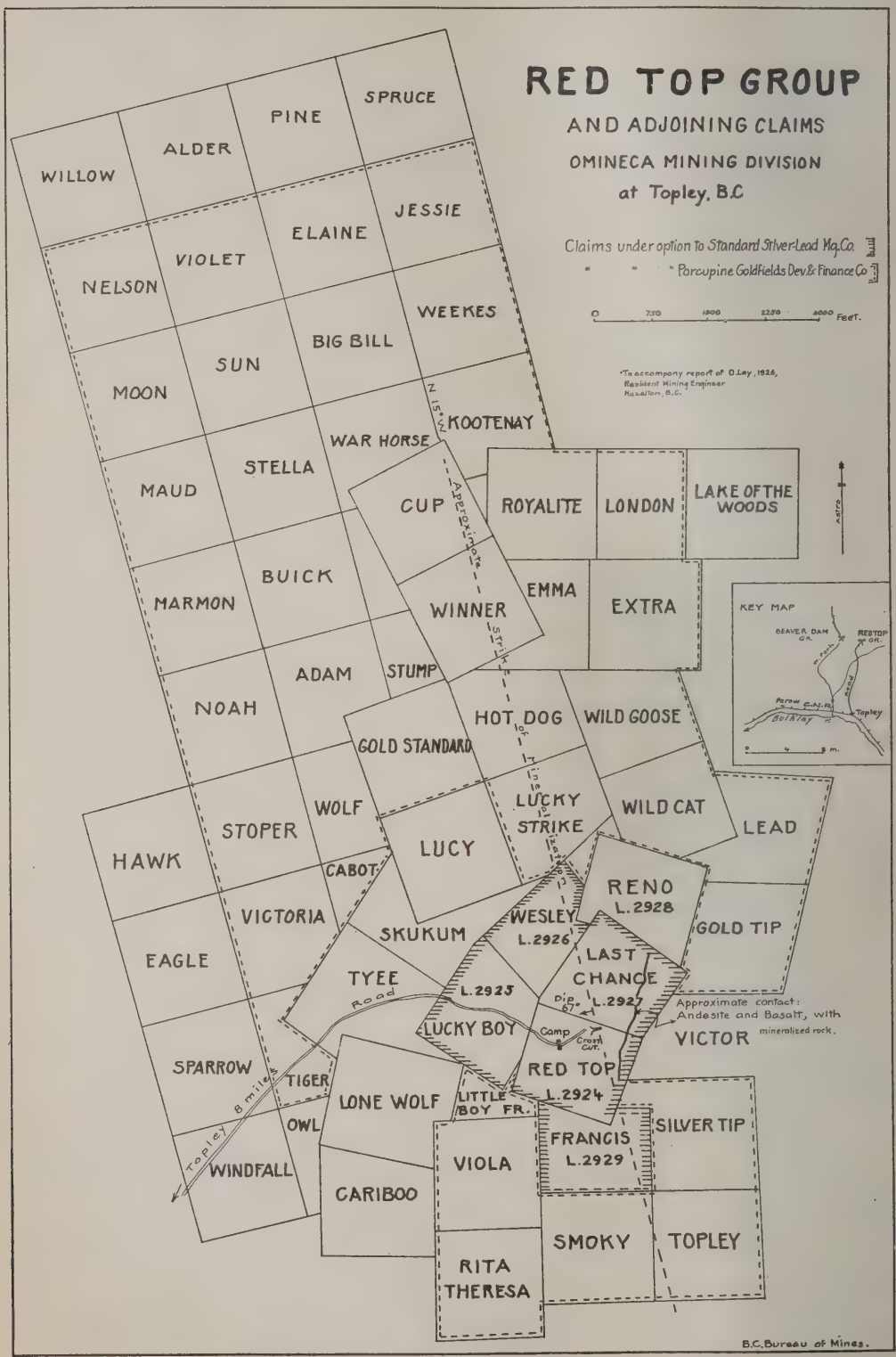
direction occur one or two very small exposures, some not over a square foot in size, of the same rock in immediate proximity to prominent outcrops of porphyritic andesite and basalt. The line of contact of the mineral-bearing rock and the andesitic and baser volcanics appears to strike about N. 10° E. (true). If the crosscut tunnel were continued in its present direction for 500 feet it would probably strike the contact. Inasmuch as amygdaloidal basalt outcrops in Finlay creek about 3 miles due south of this property, it is likely that any surface outcrop of the mineral-bearing rock should be looked for west and north of this group rather than east or south of it, although it may extend south some distance. It may of course underlie the baser volcanics. From such scanty field evidence as was available it seemed likely that the trend of the mineralization was about N. 15° W. (true), and accordingly early in July a crosscut tunnel was started at the bottom of the gulch (elevation 3,550 feet) on a bearing N. 75° E. (true); that is, at right angles to the assumed strike of the mineralization.

Such data as are available to date indicate that early ideas in this respect are probably approximately correct. It should be understood that the cover over this tunnel does not exceed about 25 feet, which will be about the maximum depth it can gain, but as a preliminary piece of development it has afforded a very valuable insight into the mineralization. The face at 57 feet from the portal is just under the mineralization struck in the first main open-cut on the surface and this mineralization has just been passed through. A few feet ahead of this on the surface another open-cut discloses another mineralized band, so that the total width of the mineralized zone to date may be taken to be 65 feet. Simultaneous with the advancement of this crosscut, the original open-cut on the surface, which is only a few feet above the back of the crosscut, was continued as a drift for a total distance of 50 feet following the mineral, just a few feet below the surface. The floor of the crosscut is in solid rock from the portal inwards, but the tunnel is not wholly within solid rock until a point about 30 feet from the portal is reached. Owing to the topography the tunnel does not gain depth very rapidly, and, as has been explained, the rock is weathered and disintegrated to an earthy material in this region, which is some 3 feet in thickness and extends upward to the grass-roots. Beyond noting that a good mineralized band was passed over just at the portal of the tunnel, assays taken during the first 30 feet can hardly be taken to represent conditions as they exist underground, in place. During the earlier stages of crosscutting the fines resulting were used as road-ballast immediately in front of the portal, so that a representative grab sample could be readily taken from the road. Such a sample assayed: Gold, 0.10 oz.; silver, 8 oz. to the ton. A sample of a pile of picked fines assayed: Gold, 0.16 oz.; silver, 13 oz. to the ton. A sample of fines in place at 18 feet from the portal assayed: Gold, 0.20 oz.; silver, 13 oz. to the ton. During the first 18 feet samples of rock from the lower part of the tunnel assayed a trace in gold and from 0.4 to 2 oz. silver to the ton. At 30 feet from the portal mineralization throughout the rock became much more prevalent, and an enriched band some 3 feet in width was passed through at 40 feet from the portal; mineralization continued to 50 feet from the portal, when another enriched band with very definite walls, 3 feet 9 inches in width, was passed through. The band at 40 feet, 3 feet wide, assayed: Gold, 0.20 oz.; silver, 19.5 oz. to the ton; lead, *nil*. The band at 50 feet, 3 feet 9 inches wide, assayed: Gold, 0.20 oz.; silver, 16 oz. to the ton; lead, 0.5 per cent.; zinc, 2 per cent. A channel sample taken from the wall of the crosscut between points 31 feet and 54 feet from portal and representing a width of 23 feet assayed: Gold, 0.13 oz.; silver, 7.8 oz. to the ton; lead, trace; zinc, 2 per cent.

The last band encountered in the crosscut was very clearly defined and was followed a short distance—8 feet—in an easterly direction. Its strike appeared to be more nearly true north and south than that recorded (N. 15° W.) as being the probable trend of the mineralization as a whole; its dip is 67° W. (true).

In regard to the drift run just above and near the face of the crosscut, this is in shattered oxidized country-rock. It should be noted, however, that primary sulphides were prevalent and there is no "zone of oxidation," so far as the mineralization is concerned, other than the purely superficial effects of surface waters and atmospheric agencies. A grab sample of the large pile of fine material resulting from the running of this drift assayed: Gold, 0.16 oz.; silver, 7 oz. to the ton; lead, *nil*. A sample taken across a width of 1.5 feet representing primary sulphides in place assayed: Gold, 0.4 oz.; silver, 12 oz. to the ton; lead, *nil*.

A grab sample taken of the shipping-ore representative of the accumulation of such from drift and crosscut assayed: Gold, 0.5 oz.; silver, 50 oz. to the ton. A sample of the best ore showing in the crosscut assayed: Gold, 0.56 oz.; silver, 91 oz. to the ton.


RED TOP GROUP
AND ADJOINING CLAIMS
OMINECA MINING DIVISION
at Topley, B.C.
Claims under option to Standard Silver-Lead Mg. Co.
" " Porcupine Goldfields Dev. & Finance Co.
0 750 1500 2250 3000 Feet.
To accompany report of D. Ley, 1926, Resident Mining Engineer Hazelton, B.C.
KEY MAP
BEAVER DAM CR.
REDTOP CR.
Parrow
C.N.R.
Topley
Bulkley
9 m.
WILLOW
ALDER
PINE
SPRUCE
NELSON
VIOLET
ELAINE
JESSIE
MOON
SUN
BIG BILL
WEEKES
MAUD
STELLA
WAR HORSE
KOOTENAY
CUP
ROYALITE
LONDON
LAKE OF THE WOODS
MARMON
BUICK
WINNER
EMMA
EXTRA
NOAH
ADAM
STUMP
HOT DOG
WILD GOOSE
GOLD STANDARD
HAWK
STOPER
WOLF
LUCY
LUCKY STRIKE
WILD CAT
LEAD
CABOT
RENO L.2928
VICTORIA
SKUKUM
WESLEY L.2926
GOLD TIP
EAGLE
TYEE
L.2925
LAST CHANCE
L.2927
Road
Camp
Cross Cut
LUCKY BOY
Approximate contact: Andesite and Basalt, with mineralized rock.
VICTOR
SPARROW
TIGER
RED TOP L.2924
LONE WOLF
LITTLE BOY FR.
SILVER TIP
OWL
FRANCIS L.2929
Topley 8 miles
WINDFALL
VIOLA
CARIBOO
SMOKY
TOPLEY
RITA
THERESA
B.C. Bureau of Mines.

To sum up the conclusions from developments to date:—

(1.) In the rock classified by the Geological Survey as a volcanic of some kind profoundly altered there occurs a mineralized replacement zone some 65 feet in width, but there appears every reason to anticipate a greater width. In this occur enriched bands and indications point to the likelihood of its being possible to profitably mine comparatively wide zones, and development may disclose a low-grade milling property of magnitude.

(2.) Mineralization consists of iron pyrites and arsenopyrite, mainly, with subordinate amounts of galena and zinc-blende; values are essentially in gold and silver.

(3.) The encountering of unaltered primary sulphide float, assays of which have been given, showing extremely high silver values is to be regarded as of importance. Referring to the list of assays given, it will be seen that no such silver assays have been duplicated underground or on the surface in place. It is therefore inferred that justification exists for entertaining the hope that the source of such rich sulphides will be found on the property; further, this rich float showed no signs of having travelled very far. It is also evident from the topography that this float cannot have come from a source south of the point at which it was found; it must have come from the north. Such rich sulphides may of course exist only in a narrow seam and their importance is quite probably subordinate to that of the larger zone of ore of milling grade. At the same time it is well to follow up all clues.

The rock in which the mineralization occurs should core well and the wisdom of a campaign of diamond-drilling, preceding or following some preliminary excavational development-work, is clearly indicated. In the absence of such and in the present state of development it is not possible to make more than an intelligent guess as to the future.

One cannot fail to be impressed by the many favourable conditions which surround this property. Attention is especially drawn to the fact that about 20 miles distant in a due-north direction at the outlet of Fulton lake the Fulton river falls almost vertically a distance of about 50 feet, making an ideal condition for the development, at comparatively low cost, of hydro-electric power. While this has not been inspected, from all accounts the power available is quite large. Moreover, a highly favourable feature is the fact that the waters of Fulton lake are warm, tending to greatly minimize, if not to entirely eliminate, ice troubles in winter.

Nearness to transportation, low elevation, hard rock permitting wide unsupported excavations and shrinkage-mining methods, near-by source of water-power and timber are features which, considered in conjunction with mineral possibilities, combine to make this property an unusually attractive prospect.

Towards the end of the year a lease and bond on this property was taken by Standard Silver-Lead Mining Company (former operators of the well-known *Standard* mine at Silverton, Slocan district). The manager, W. H. North, very kindly outlines contemplated preliminary development as follows:—

"Our plan of development is to sink 150 feet and crosscut and drift on this level, and if the showing here warrants it we will then go an additional 150 feet. We have sent in a 320-cubic-foot Sullivan air-compressor."

Porcupine Goldfields Development and Finance Co., Ltd.—In November this company, by in part optioning and in part direct staking, acquired a large rectangular block of claims surrounding the *Red Top* group. The position is clearly shown on the map. Operations were started in the region south of the *Red Top* group with a small crew of men in November, following up signs of mineralization by open-cuts and surface prospecting generally. Winter quarters to accommodate a small force were also erected.

Beaver Dam. This group consists of six claims, owned by George Findlay and E. E. Orchard. It is situated at an elevation of 3,335 feet on the West fork of Findlay creek and is distant about 3 miles in a north-westerly direction from the *Red Top* group. In this region the creek has cut down through the plateau to a depth of about 75 feet just at the contact of the granodiorite batholithic rock with basic volcanics. The actual line of contact approximately parallels the creek and occurs just at the top of the right bank of the creek, while on the left bank occurs a boss of granodiorite of undetermined extent. The contact phase of the batholith appears to be a quartz porphyry, which near the contact is pyritized and also shows a considerable amount of iron-stain. Near such a contact development of some iron oxides frequently takes place, but such mineralization does not infer that commercial values are likely. At one point of the contact a phase of the batholithic rock certainly has points of

superficial resemblance to the mineralized rock of the *Red Top* group and might easily be mistaken for it. A sample of this rock assayed: Gold, *nil;* silver, *nil.* At another point of the contact a sample of the mineralized batholithic contact assayed: Gold, *nil;* silver, *nil.*

The geology of this group is certainly promising and the surface should be closely prospected.

Kylling & McCrea Properties.

This group lies south of Huckleberry mountain and considerably east of the wagon-road to Babine lake, from which a trail leads to the property. Outcrops of volcanic rocks, mainly breccias, are fairly numerous and at certain points are pyritized to some considerable extent. A sample at one of the more heavily pyritized spots assayed: Gold, *nil;* silver, *nil.*

Wade Property.

Mackaboy creek flows into the Bulkley river about 1 mile east of Perow, which is about 6 miles due west of Topley. Mackaboy creek has cut down somewhat deeply, perhaps 150 feet in places, through the plateau and affords a good geologic section. About 2½ miles up the creek from Perow on this group there is exposed on the steep banks of the creek a rock slightly pyritized, resembling the *Red Top* group rock, in which the replacement mineralization occurs on that property. Underlying this is a bed of volcanic breccia containing fragments of argillite, quite heavily pyritized in places with veinlets of fine-grained iron pyrites and showing barite. Higher up the creek are exposed argillites also pyritized. These pyritized beds of argillite and breccia were said to carry gold values, but samples failed to disclose more than traces of precious metals. It was noted that a very large percentage of the boulders in the creek, some of very large size, consist of feldspar-prophyry rock of unmistakable appearance, in which the light-coloured feldspar crystals of rectangular shape are 1½ inches or so in length and stand out prominently in the almost black ground-mass. This creek should be followed upwards in an effort to discover this feldspar porphyry in place, because with it are associated on Grouse mountain and Mineral hill the mineralization in those regions. Likewise the rock resembling the *Red Top* rock should be followed on both sides of the creek. The region of this group is well worth close prospecting.

Lakeview.

This group (formerly the *Three Lakes* group) is owned by E. Wilson, of Telkwa. It is situated in the foot-hills of the Babine mountain just at the western extremity of the Nechako plateau. It is distant about 5 miles from Knockholt Station on the Canadian National Railway (13 miles west of Topley). The claims are on the south slope of a small hill rising about 750 feet above three small lakes at its base. The elevation of the lakes is 3,175 feet.

At an elevation of 3,700 feet there is exposed by four open-cuts and a shallow shaft, extending over a length of about 300 feet, a heavy mineralization of specular hæmatite showing copper pyrites. The stained country-rock is apparently rhyolite. The mineralization will average close to 10 feet in width and strikes due north and south (mag.), dipping westerly. Perhaps 50 feet vertically below this exposure, on a branch mineralization diverging at about 45°, a shaft has been sunk which is now filled with water. It is stated to be 50 feet in depth, with drifts run therefrom at the bottom.

Somewhat over 1,000 feet in a northerly direction, at an elevation of 3,725 feet, there is exposed over a length of 150 feet by open-cuts (two shafts about 15 to 20 feet deep are also sunk at this point, but were filled with water at the time of inspection) a similar mineralization to that mentioned above, of which it is probably the continuation. This occurs in the immediate vicinity of volcanic breccia and rhyolite. The mineralization is about 10 feet in width, of which at one point a width of 6 feet is fairly solid specular hæmatite, with a considerable amount of copper pyrites and copper-stains. A sample taken across this width of 6 feet assayed: Gold, trace; silver, 2 oz. to the ton; copper, 4 per cent.

The topography is such that depth could readily be gained by crosscutting from the surface, and it is unfortunate that precious-metal values are low, as the mineralization is strong.

Burns Lake Section.

Kathleen Jane.

This group, owned by G. B. Stanton and M. A. Moore, is situated at the east end of Tchesinkut lake and about 2 miles from the north shore. Amygdaloidal andesite on the banks of Canyon creek shows at various points small fractures with development of specular hæmatite. The amount of the latter mineral is in any case small and samples showed no values in gold or silver. One sample showed 1 per cent. zinc. Such

Otterson's Tractors at Vanderhoof.

Red Top Mine at Topley.

mineralization is common in this rock and in many cases, as in this instance, has no commercial significance.

Golden Glory, Golden Glory No. 1, Silver Glance, Blue Diamond.

These claims are situated on Reed creek, which flows into Decker lake on the south side opposite the settlement of Decker Lake. The first two mentioned are owned by W. Reed and R. H. Gerow and the last two mentioned by J. C. McLean and D. M. Gerow. A visit was paid to the properties, but unfortunately the tunnel on the *Golden Glory*, where the main showing is exposed, was caved at the time so that the visit was largely abortive. The claims are distant somewhat over a mile from the lake. Reed creek, flowing easterly, has cut down to a depth of between 150 and 200 feet in the region in which these claims are situated, exposing on both sides the volcanic rocks. On the *Blue Diamond* and *Silver Glance* a sparse mineralization of copper pyrites and a little zinc-blende was noted at one or two points. On the *Golden Glory*, in the tunnel which was caved at the time of inspection, there is said to be a good showing of copper pyrites carrying good silver values.

Taltapin Mining Co., Ltd.

A full description of this property appears in the Annual Report for the year 1920. More recent developments are mentioned in the Annual Report for 1925. This property, in so far as the state of the workings permitted, was examined in 1925. A shaft and workings therefrom, being at that time under water, could not be examined. Likewise a vein known as the High Grade vein could not be examined, because Anderson creek was flowing over the exposure, which is at the bottom of a steep cliff, and it was impossible to get anywhere near it.

This year the Resident Engineer went to Burns Lake for the purpose of inspecting the property, but was informed that the shaft was full of water and could not be inspected. An effort was made to arrange with the company for an inspection later in the season. Owing to no further word being received from the company and the shaft not being unwatered no further examination was made. Last year all the more important surface exposures were pointed out to the Resident Engineer. With the exception of the High Grade vein, these were examined and sampled. At that time there were exposed a number of sparsely mineralized quartz veins showing no commercial ore, with comparatively flat dip, varying in width from a few inches up to 4 feet and possibly wider if walls were exposed. Three tunnels, two of them connected underground, had been run from the creek-level on certain of the veins. The total drifting amounted to about 200 feet. Such disclosed a sparse mineralization similar to that observed on the surface.

Mineralization showing is essentially galena and zinc-blende, with small amounts of copper pyrites, iron pyrites, arsenopyrite, and a little grey copper. The mineralization being too sparse to take samples across definite widths, samples of selected mineral were taken from the best exposures, purposely to ascertain the content of precious metals. The results were as follows:—

Description.	Gold.	Silver.	Copper.	Lead.	Zinc.
	Oz. per Ton.	Oz. per Ton.	Per Cent.	Per Cent.	Per Cent.
Selected sample from surface, vein No. 2	Trace	1.0	.....	2.0	4.0
Selected sample from surface, vein No. 1	Trace	2.0	Trace	1.0	2.0
Selected sample from vein No. 3	Trace	1.6	1.8	Trace	1.0

At the time of inspection in 1925 the Resident Engineer was informed that a shipment of some 4 tons of hand-sorted ore was made from the High Grade vein and was shown a pile of ore stated to be the cullings from hand-sorting. The pile of ore would be about 1 ton in weight; a grab sample of this pile assayed: Gold, 0.04 oz.; silver, 16 oz. to the ton; copper, 1.5 per cent.; lead, 9 per cent.; zinc, 16 per cent.

The Resident Engineer was informed that the shaft had been sunk at that time to a vertical depth of 90 feet and that at 30 to 35 feet below the collar a mineralized vein was passed through. With the idea of penetrating this vein, a crosscut was run west at the bottom of the shaft for a distance of 70 feet without crosscutting it. It is possible that the crosscut was not continued far enough, as no particulars are to hand as to dip of vein.

While cutting out a pump-station at the bottom of the shaft, another vein, not exposed on the surface, was penetrated, which was said to show a width of 3 feet of good ore, and it was stated at that time that it was the intention to drift on the last-mentioned vein before sinking

farther to intercept the downward continuation of the High Grade vein, which it is to be noted was the objective sought by sinking this shaft. At the collar of the shaft was a small pile of ore, which it was stated had resulted from the ore struck at the bottom of the shaft. This was seen to be essentially zinc-blende with some galena, a little chalcopyrite, and iron pyrites. A sample of it assayed: Gold, trace; silver, 3.6 oz. to the ton; copper, 1 per cent.; lead, 3 per cent.; zinc, 27 per cent.

It is understood that this year there have been accomplished "50 feet of tunnelling and sinking." Assuming that this is correct, likewise the statement made at the time of inspection last year as to the underground development, the total underground workings amount to a length of about 210 feet, of which the major portion must be in country-rock. It is clear that no appreciable reserves of ore have yet been proven on this property.

Sibola Section.

Whitesail Lake.

The owners of all the groups described below are C. V., W. H., and J. E. Harrison, A. Thomas, and J. Michelsen. All these groups are situated on the north slopes of Chikamin mountain.

Sunset. This group is situated on the south shore and about 17 miles up Whitesail lake. At the level of the lake the slopes of Chikamin mountain rise up sharply to 75 or 100 feet at this point. The country-rock is classified by the Geological Survey as water-lain tuffs. Small seams of quartz with zinc-blende strike, with the enclosing country-rock, N. 40° W. (mag.), dipping at steep angles. The greatest observed width of any seam was 20 inches. At the level of the lake a tunnel has been run as a drift on one narrow seam a distance of 50 feet; at the end is a crosscut 110 feet long which cuts two other small seams.

A seam 4 inches in width in the drift assayed: Gold, 2.4 oz. to the ton; zinc, 54 per cent. A seam in the crosscut, 4 inches in width, 15 feet in, assayed: Silver, 1.2 oz. to the ton; zinc, 40 per cent. Another seam in the crosscut, 6 inches in width, 85 feet in, assayed: Silver, 1.2 oz. to the ton; zinc, 30 per cent. All samples showed a trace of gold. These showings are not of commercial importance.

About 900 feet farther up the lake, at another point about 30 feet above the lake-level, there is exposed a mineralized seam showing a little zinc-blende and galena. A picked piece of the galena, taken to ascertain silver grade, assayed: Gold, 0.04 oz.; silver, 56 oz. to the ton; lead, 60 per cent.; zinc, 16 per cent. This showing, or the near-by region, might merit a little attention on the part of the owner.

Monarch. This group (formerly *Silver Tip* group) is situated on the south shore, about 3 miles up the lake from the *Sunset* group. From a landing at this point a trail about 1½ miles in length leads up to the showings. At an elevation of 1,150 feet above the lake (lake is 2,725 feet above sea-level) a tunnel some 95 feet in length, partly drift and partly crosscut, follows a seam of galena and zinc-blende about 1.5 feet in width a distance of 40 feet from the surface. At this point the tunnel, previously run on a bearing S. 35° E. (mag.), bends more easterly, presumably because of pinching of mineral in former direction, becoming for the next 30 feet a crosscut, finally penetrating a sheared zone showing a width of 9 inches of compact galena and zinc-blende. After exposing this mineral the tunnel was swung off at right angles for another 25 feet, with the object, it is stated, of again cross-cutting the mineral-seam first followed from the surface. A cave-in at the end of the tunnel prevents access to face.

The country-rock is classified by the Geological Survey as a water-lain tuff. Mineralization is a shear-zone replacement and consists essentially of compact galena and zinc-blende, with a little copper pyrites and arsenopyrite. At the portal of the tunnel is a pile of hand-sorted ore of perhaps 20 or 30 tons, showing mainly galena. A sample taken in the tunnel across the 9 inches of mineral in the crosscut assayed: Gold, 0.14 oz.; silver, 76 oz. to the ton; lead, 48 per cent.; zinc, 12 per cent.

Some 300 yards above this tunnel and perhaps 100 yards from the cabin on the property, at an elevation of 3,925 feet, some open-cuts expose a seam, 1.5 feet in width, of galena, zinc-blende, and arsenopyrite, with a little copper pyrites; this strikes about due east and west (mag.) and dips northerly. Some 25 feet away is another smaller parallel seam. The owner is advised to dig a trench between these two parallel seams to ascertain if there is any more mineral in

between. About 50 feet away up the hill is another compact seam of galena and zinc-blende 8 inches in width. Some more trenching in this region would be advisable.

Shamrock. This group (formerly *Nickel Plate* group) lies above the *Monarch* group. On it there occurs a narrow vein, the greatest observed width of which was 27 inches, which is remarkably persistent for 2,000 feet or more and is said to continue over the summit of Chikamin mountain down on the slope facing Eutsuk lake. The country-rock is classified by the Geological Survey as silicified water-lain tuff. The vein strikes about N. 68° W. (mag.) and the dip is almost vertical or slightly to the north-east. Exposures by open-cuts and short tunnels are frequent and were followed on the surface between elevations of 5,100 and 5,900 feet. Almost all exposures of the vein show mineral. The mineralization is essentially galena and zinc-blende, with a little copper pyrites and iron pyrites. The vein-filling is quartz.

At 5,130 feet elevation a tunnel 10 feet long exposes a width of 10 inches of mineral assaying: Gold, trace; silver, 11 oz. to the ton; lead, 2 per cent. At 5,165 feet elevation an open-cut exposes a width of 20 inches of mixed sulphides and quartz assaying: Gold, trace; silver, 9 oz. to the ton; lead, 1 per cent.

At 5,175 feet elevation an open-cut partly filled with water showed the best exposure noted, consisting of a width of 24 inches of fairly compact sulphides. Only a width of 14 inches could be sampled owing to water, but the remainder of the width looked just as good. The sample across 14 inches assayed: Gold, 0.10 oz.; silver, 43 oz. to the ton; copper, 2.5 per cent.; lead, 26 per cent.; zinc, 14 per cent.

At 5,300 feet elevation a width of 27 inches of quartz showed a seam 10 inches in width of compact sulphides assaying: Gold, 0.10 oz.; silver, 47 oz. to the ton; lead, 24 per cent. At 5,250 feet elevation there is exposed by open-cut over a length of 20 feet a width of 18 inches of mixed quartz, galena, and zinc-blende. At 5,400 feet elevation a width of 6 inches of quartz and sulphides is exposed.

At 5,575 feet elevation there is exposed a width of 15 inches of quartz somewhat sparsely mineralized. At 5,625 feet elevation a foot in width of quartz slightly mineralized is exposed. At 5,900 feet, the highest showing inspected, a tunnel is driven on the vein for 15 feet and exposes two small stringers of galena 2 or 3 inches in width. Both vein and mineralization are persistent, but silver values are unfortunately not very high.

Grizzly.—This group is situated on the south slopes of Chikamin mountain, facing Eutsuk lake, and, it is stated, covers the ground in which the *Shamrock* vein continues. Time did not permit of inspection.

Sweeney Mountain.

Emerald. This well-known property, owned by W. Sweeney and associates, was examined by field engineers of operating companies during the year. Being in the vicinity in June, the Resident Engineer made what proved to be an abortive attempt to inspect it and the *Oriental* group on Sibola mountain. An ascent of the summit of Sweeney mountain was made, but much snow and dense clouds rendered inspection impossible.

Much information on the Sibola section and an excellent map will be found in the Annual Report for 1916. Also in Summary Reports, Part A, of Geological Survey, for the years 1920 and 1924.

Tesla Lake Region.

This region lies in the extreme south-western portion of the Sibola section of the North-eastern Mineral Survey District. Referring to the map, it will be seen that Tesla lake lies some 8 miles south of Eutsuk lake and extends for a length of about 15 miles in an east-and-west direction. Tesla lake is about 1¼ miles in width at its widest point and is situated at an elevation of approximately 3,100 feet. Tesla mountain lies immediately south of Tesla lake and the precipitous northern sides of the mountain rise sharply from the south shore of the lake to a height of some 3,000 feet above the latter. The elevation of the summit of the mountain was found by aneroid to be 6,150 feet. The region embraces a portion of the eastern contact-zone; that is to say, the contact of the Coast Range batholith with the volcanics and sedimentaries of the Interior.

Inspection of this region was made in 1926 because of reports received at the end of 1925 of the existence of promising mineral-showings on Tesla mountain. It was reported also that it was entirely feasible to construct a trail, about 35 miles in length, from Kimsquit, on Dean

SAKUMTHA PASS
Coast Range.
Scale: 1 2 3 4
Route Taken by D. Lay, 1926 from Kimsquit to Tesla mt. and Pondosy bay show thus ------
With Report of D. Lay, Resident Mining Engineer, Hazelton, 1926.
Eutsuk lake
2815'
Pondosy Pass
Tesla lake
Tesla river
Specular group
Tesla mt.
Mineral claims
Omineca Mining Division
Bella Coola M.D.
Sakumtha Pass
El. 3230'
COAST RANGE
Dean River
KIMSQUIT
Dean Channel
Route Taken by D. Lay, 1926
Kimsquit to Burns Lake
via Sakumtha pass.
C.N. Burns Lake Ry.
Francois L.
Ootsa L.
Tahtsa L.
Whitesail
Portage
Eutsuk L.
Telachuk L.
Pondosy Bay
Pondosy Pass
Specular gr
Tesla mt.
claims, 6150'
pass 4150'
Sakumtha
Omineca M.D.
Bella Coola M.D.
Dean river
Kimsquit
Chonnet
Ocean Falls
Dean
Bella Coola
Scale: 20 40 Miles
B.C. Bureau of Mines.

channel, through a new pass in the Coast range to Tesla mountain. Aid was sought from the Department of Mines in constructing this trail. In view of the known general geologic promise of the region, and of the fact that the only other route into the region was over a trail from Bella Coola, a distance of 180 miles, requiring a ten-day trip with pack-horses, aid was granted by the Department of Mines towards construction of the new trail from Kimsquit. At the end of the season only some 17 miles of trail had been completed, although the remainder of the distance to Tesla mountain, about 15 miles, has been thoroughly cruised and partially brushed out.

In inspecting the region a start was made from Kimsquit and the route followed was approximately that of the completed trail. But at the time the trip was made only some 15 miles of trail were completed and the route through had not been cruised. Moreover, this region has not yet been surveyed; consequently the objective was not reached without somewhat hard travel in rugged country. Very fortunately, the Government survey party in charge of F. C. Swannell was at the time engaged in surveying the region around Tesla lake, having gone into this region following the trail from Bella Coola earlier in the year. It had been previously arranged that the party with the Resident Engineer would endeavour to meet the survey party at the east end of Tesla lake on July 22nd.

A start was made from Kimsquit on July 19th, but in spite of hard travelling it was not possible to effect the meeting until July 23rd. Especial thanks are tendered to F. C. Swannell and his party for many courtesies extended on this occasion.

From Kimsquit, at the mouth of the Dean river, on Dean channel, the trail to Tesla mountain follows the old Dean River trail for about 12 miles to the junction of the Dean and Sakumtha rivers. It then follows the Sakumtha river for a further 3 miles, crossing this river just below the mouth of the West fork. Thereafter the Main and East forks of the Sakumtha river are followed for a further 10 miles approximately. Near the headwaters of the East fork the trail leaves the river and follows a defile on the right bank, which leads into a pass extending through the heart of the Coast range in a north-westerly direction for some 7 miles to Tesla lake.

The elevation of the southern end of the pass was found to be 3,250 feet above sea-level, according to aneroid barometer. The pass is a wide flat-bottomed valley with much meadow land. The drainage is northerly towards Tesla lake, the elevation of which is about 3,100 feet. The Tesla Mountain trail continues in the pass for about 3 miles, and then leaves it, angling up the mountain-slopes on the east side for perhaps 7 miles to the objective. The new pass just described will be known as the Sakumtha pass.

It is also to be noted that there is another pass through the mountains between Tesla and Eutsuk lakes, almost opposite the end of the pass just described. By continuing the trail in the latter through to Pondosy bay on Eutsuk lake an easy way of reaching Burns Lake Station on the Canadian National Railway will be opened up. From Eutsuk lake, Ootsa, on Ootsa lake, is readily reached by motor-boat, with one short portage between Eutsuk and Whitesail lakes. Between Ootsa lake and Burns Lake Station there is a regular motor-stage service.

It will be appreciated that distances onward from Kimsquit mentioned herein can only be regarded as close approximations at best. It is apparent, however, that with very small expenditures a wonderful route can be readily opened up, giving access from the Pacific to the Great Lake district of the Interior with steamboat connections at one end and railway connections at the other. A route, moreover, which offers a rare combination of diversity of travel, grandeur of scenery, and big game and fishing attractions. There appear to be no difficulties whatever in the way of road or trail construction. In brief, the approach to the Sakumtha pass is some 25 miles in length to the south end of the pass, with a total rise as mentioned of 3,250 feet in this distance. Thereafter the distance of perhaps 15 miles to Pondosy bay, Eutsuk lake, is to all practical intents and purposes level, although there is an actual fall of about 435 feet in this distance.

Tesla Mountain Mineral Claims.

General Geology.—Tesla mountain itself appears to consist largely, if not entirely, of volcanic rocks, mainly andesitic, with others of baser composition. Strike was observed to vary from N. 45° E. (mag.), with north-westerly dip, to due north and south (mag.), with easterly dip. The angle of dip might average 45°. Very little time was available for general examination of the country and had to be devoted practically entirely to the examination of certain mineral-showings. It was noted that volcanics first make their appearance just north of the West fork

of the Sakumtha river, south-west of which point the country-rock is entirely Coast Range granodiorite. Granodiorite also outcrops on the south shore of Tesla lake, towards the east end of the lake. Development of red jasper in the volcanics was observed at several points in the region near Tesla mountain.

Dolly D. This claim is owned by J. Schafer and is situated on the south slopes of Tesla mountain. At an elevation of 5,250 feet there is exposed a silicified mineral-zone about 12 feet wide, striking N. 65° W. and dipping steeply to the north. The hanging-wall is amygdaloidal andesite and the foot-wall volcanic conglomerate. The mineral-showing is a little malachite and copper pyrite. A sample was taken across the best portion of the exposure, 4 feet in width, which assayed: Gold, trace; silver, trace; copper, 1.5 per cent. The exposure is entirely due to natural agencies.

Chalcopyrite. This claim is owned by P. Gadsden and is situated on the north slope of Tesla mountain. At an elevation of 5,530 feet there is exposed by open-cut a silicified zone, which appears to follow the strike and dip of the enclosing andesite country-rock. The strike of the latter is due north and south (mag.) and dip 45° to the east. Scattered chalcopyrite and some copper-stains show over a width of 8 feet 6 inches. A picked sample of this was taken, which assayed: Gold, trace; silver, 1.6 oz. to the ton; copper, 5.5 per cent.

Some 300 feet to the west are exposed two other mineralized zones showing a very little galena and some small amounts of barite. These also appear to follow the strike of the andesite country-rock. No work whatever has been done on them. The owner is advised to do a little work at the points showing galena.

Tetrahedrite. This claim is owned by G. A. Young. At 5,750 feet elevation on the north slopes of the mountain a quartz vein about 12 inches in width is exposed by natural agencies in andesite country-rock. The quartz shows copper-stains and is well mineralized with grey copper. Another small vein 2 or 3 inches in width, with similar mineralization, occurs a few feet from the first mentioned. Examination was rendered difficult owing to the very steep slope. The strike of the veins is N. 80° E. (mag.) and the dip southerly at about 45°. The length of the exposure could not be determined owing to inaccessibility, but the 12-inch vein seems to be exposed for not less than 100 feet, but whether equally well mineralized at all points of this length could not be ascertained. A sample across the 12-inch vein was taken which assayed: Gold, trace; silver, 133 oz. to the ton; copper, 4.2 per cent.

General Remarks.—Actual showings of mineral on Tesla mountain are somewhat disappointing. Where there is promise of any material width the values are low and in the only case where values were promising the width is small. It must, however, be remembered that no appreciable amount of work has been done on any exposure.

The grave difficulties under which prospectors in this region have worked will be understood when it is explained that until completion of the trail from Kimsquit the only way of getting to Tesla mountain is by trail from Bella Coola to the east end of Tesla lake, a distance of 180 miles and ten days' journey with pack-horses. On arrival at the east end of the lake supplies have to be transferred to raft and poled up the lake to the foot of Tesla mountain. A trail has been constructed up the mountain by P. Gadsden at his own expense, for which he is entitled to much credit. It is hoped that when the trail from Kimsquit is completed more activity will take place in this region.

Specular. This group is situated on the north side of Tesla river. The name of the owner is C. W. Frank. It is said to be a very old location. The main exposure is on the banks of the Tesla river, about 2 miles below the lake. At this point the banks rise up sharply to a height of about 100 feet above the river. There is exposed in andesitic volcanics, which form the steep banks of the river, a silicified mineralized zone 12 feet in width, of which a width of 4 feet is more heavily mineralized than the remainder. The minerals showing are specular iron, chalcopyrite, and copper-stains. The zone conforms in dip and strike with the country-rock, striking N. 45° W. (mag.) and dipping at 72° to the south-west. The cliff-like exposure is apparently largely the result of natural agencies aided by open-cutting and extends from the river to the top of the bank.

A sample taken of picked pieces of chalcopyrite assayed: Gold, trace; silver, 3 oz. to the ton; copper, 5.8 per cent. A sample taken of the best ore showing immediately above the river assayed: Gold, trace; silver, 0.8 oz. to the ton; copper, 0.4 per cent.

The mineralization is strong and of good width and it is unfortunate that values are so low. Doubtless the zone continues on the south side of the river. If so, it should be exposed on the banks on this side. The owner might with advantage look for it here to ascertain if any more promising values are indicated.

Manson Section.

It was not possible to visit this section during 1926, but it is hoped to do so in 1927. Very little information has been secured concerning this section and this is given at the commencement of this report under "Placer-mining."

It might also be mentioned that Lee Tong, a Chinaman, who is said to be managing a Chinese company operating on Vital creek, brought into Hazelton one lot of gold (at least 100 oz.) which was remarkable for its coarseness and even size of the individual pieces. In fact, it appeared as if it had been screened and all fines rejected. This gold was very much coarser than the average run of gold in the Cariboo district, each piece being practically a small nugget.

Fort Grahame Section.

Fort Grahame, a small settlement at which there is a Hudson's Bay Company's post, is situated on the Finlay river, some 65 miles above Finlay Forks. It lies approximately in the centre of a narrow strip of Pre-Cambrian formation, which extends some 125 miles to the north and south and between 15 and 25 miles east and west of the river systems, which have their courses in the Rocky Mountain trench.

The geology is thus described by G. A. Young in "Geology and Economic Minerals of Canada," published by the Geological Survey:—

"Along the Finlay and Omineca rivers in and near the Rocky Mountain trench are considerable areas of gneissic and schistose rocks accompanied by crystalline limestone. Some of the rocks are deformed igneous rocks, but the bulk of the strata are of sedimentary origin, are in large part evenly bedded, and conform in dip with overlying much less metamorphosed sediments. The overlying younger beds consist of slates and quartzites with a basal conglomerate, and in places have a thickness of 4,000 feet. These are succeeded upwards by a thick limestone group, which in places rests directly on the much metamorphosed lowest assemblage. The gneissic and schistose rocks have been correlated with the Shuswap strata of southern British Columbia and as such were considered to be of early Pre-Cambrian age. The overlying limestone strata are presumed to be of Cambrian and perhaps later age; the clastic beds beneath may be Cambrian or late Pre-Cambrian or possibly contain representatives of both ages."

This region is of particular promise from a mineral standpoint, more especially because the Pre-Cambrian area in East Kootenay, occupying a precisely similar position in the Rocky Mountain trench, has produced the famous *Sullivan* and other well-known lead-zinc mines of that district. There are many remarkable points of similarity, both geologic and topographic, which coupled with the mineral-showing in the northern area justify the hope that another *Sullivan* may be found in the latter area. Prospects in this region are hopeful not only in regard to lead-zinc deposits, but also in regard to mica and probably also asbestos. Unfortunately the fact that the region is so remote from transportation does not encourage active prospecting. Indeed, under existing conditions, while a certain amount of development might be accomplished, it is well-nigh hopeless to contemplate the active operation of any properties other than gold or mica, and even such must incur high cost of production.

Fort Grahame has recently come into prominence because of the operations of the General Holding Company, of Edmonton, at its mica properties on Mica mountain, distant some 6 miles from the settlement, and where also a discovery of muscovite mica crystals of exceptional size was made this past summer by H. Ravenal, and also because of the fact that good surface showings of lead ore exist on the *Ferguson* group on the Ingenika river, about 45 miles distant.

It should be understood that it is not only this comparatively small Pre-Cambrian strip which offers mineral promise. To the west and south-west of the latter there is a very large area known to be of great general geologic promise.

Means of Access and Cost of transporting Supplies.

Fairly full information is given in the hope that it may be of use to those who may contemplate any operations in the district. Waterways form the only channels of communication at present, the district being devoid of roads.

Two alternative routes are available for getting in supplies to Fort Grahame:—

(1.) From Prince George, on the Canadian National Railway, by motor-truck to Summit lake; thence via Crooked, Pack, Parsnip, and Finlay rivers to Fort Grahame, a total distance of about 245 miles.

(2.) From Edmonton by Edmonton, Dunvegan & British Columbia Railway to Peace River; thence by stern-wheel steamer to Hudson Hope; thence across a 14-mile portage; thence continuing by boat up Peace and Finlay rivers to Fort Grahame, a total distance of 738 miles.

Of these routes, the former is preferred, because it is down-stream all the way to Finlay Forks, but it is open to the objection that it is only open for six weeks of the year, during late spring and early summer, for conveyance of more than a few hundred pounds of freight. Moreover, the hazard of navigation is very considerable during the open high-water period mentioned, when small scows with a maximum safe load of 3 tons can be used. This route cannot be used for shipping material out—ore, for example.

The latter route (2) is up-stream all the way, and there are two rapids—the Parle Pas and Finlay rapids—up which boats have to be lined. Scows cannot be taken up at present. On the other hand, it is the only route by which large quantities of material can be shipped out and it is open in normal years for at least five months. Moreover, in improving this route by blasting out a channel in the Finlay and Parle Pas rapids at low water lies the only hope, short of a railway, of materially improving transportation conditions, because the cost of an arterial road is out of all proportion to the advantages gained.

Gordon F. Dickson, manager of the General Holding Company, has kindly supplied figures as to cost of getting in supplies for his company, which are given herein and which represent minimum costs prevailing; that is to say, the cost of transporting comparatively large quantities of freight in 3-ton scows from Prince George to Fort Grahame. The costs applying to 32½ tons of freight taken in to Fort Grahame from Prince George during 1926 were as follows:—

Motor-trucking, Prince George to Summit lake, 30 miles, 1 cent a pound; Summit lake to Finlay Forks, 150 miles, 5 cents a pound; Finlay Forks to Fort Grahame, 65 miles, 1.7 cents a pound; total, 7.7 cents a pound.

If Edmonton is the outfitting base, the total cost from Edmonton will be 9.3 cents a pound, as the railway freight on L.C.L. lots of average mine freight is 1.6 cents a pound from Edmonton to Prince George.

Regarding the alternative route, from Edmonton via Peace River, until the upper Peace River channel at Finlay and Parle Pas rapids is effectively cleared, by blasting at low water, so as to permit of the operation of a small stern-wheel steamer or high-powered motor-boat between Peace River portage and Fort Grahame, it will not be possible to take up or down any material quantity of freight without incurring heavy risks and expense.

Assuming that the channel is cleared at the points mentioned, the following cost is estimated by Gordon F. Dickson, manager of General Holding Company:—

Incoming Freight.—Rail, Edmonton to Peace River (Edmonton, Dunvegan & British Columbia Railway), 322 miles, 1.05 cents a pound; steamer, Peace River to Hudson Hope, 242 miles, 3 cents a pound; portage, 14 miles, 0.75 cent a pound; upper portage to Finlay Forks, 95 miles, 2.50 cents a pound; Finlay Forks to Fort Grahame, 65 miles, 1.75 cents a pound; total, 9.05 cents a pound.

Outgoing Freight.—Fort Grahame to Finlay Forks, 1 cent a pound; Finlay Forks to portage, 2 cents a pound; over portage, 0.75 cent a pound; Hudson Hope to Peace River, 0.75 cent a pound; handling charge at Peace River, 0.20 cent. a pound; Peace River to Edmonton (car-lot), 0.39 cent. a pound; total, 5.09 cents a pound.

It is possible to ship out under present conditions small quantities of freight—say, shipments of mica, for example—at costs approximating to the above, although there is very considerable hazard.

Motor-trucking Costs.—It has been urged that if a trunk motor-road were constructed onwards from the Vanderhoof–Fort St. James existing road to Manson Creek, thence to Finlay Forks, thence to Fort Grahame, a total distance of about 285 miles from Vanderhoof to Fort Grahame, relief would be afforded. It is not difficult to demonstrate that the advantages gained are not by any means commensurate with the expenditure involved.

The cost of transport by motor-truck over good roads varies in the North-eastern Mineral Survey District from 22 cents a ton-mile to 42 cents a ton-mile where large quantities of freight

General Holding Company—Mica at Fort Grahame.

Ravenal's Mica Claim, Fort Grahame.

DUE IT NOT
BY 19
PENALTY OF $1.00

are concerned. The former figure is exceptionally low and maintains between Pouce Coupe, in the Peace River Mining Division, and Grande Prairie, in Alberta, a total distance of 90 miles in level country over exceptionally good roads. Assuming that a road was constructed between Vanderhoof and Fort Grahame, the cost of which might amount to $500,000, motor-trucking costs between these points could not be less than 30 cents a ton-mile or a total of 4¼ cents a pound. But a base-metal mine ships out in the form of ore at least 8 tons for every ton of miscellaneous freight shipped in. It is estimated that by improving Peace River channel, at vastly less cost than that of constructing the road mentioned, the cost of shipping ore from Fort Grahame to Edmonton would be about 5 cents a pound. The cost of trucking over the proposed road might quite easily amount to this.

Comparison between Cost of Transport by Motor-truck and Cost of Transport by Railway.—Cost of railway transport of miscellaneous mine freight may be taken to average about 6 cents a ton-mile for L.C.L. lots and 2½ cents a ton-mile for car-load lots. Freight rates on ores are very much less than this. For example, the freight rate on ore from Smithers to Trail, a distance of about 1,000 miles, averages only ¾ cent a ton-mile. It has been pointed out that motor-trucking costs over any contemplated northern road would be 30 cents a ton-mile.

It must therefore be apparent that no base-metal mining operations can take place on any large scale in this, or any other remote, region unless a railway forms the main transportation artery. Present conditions will be very sensibly ameliorated by clearing the Peace River channel as indicated, and the outlook for mica-mining operations will be rendered much better. At the same time there can be no real expansion, nor can the active development of base-metal properties take place, until a railway passes through the heart of the region.

Mica.

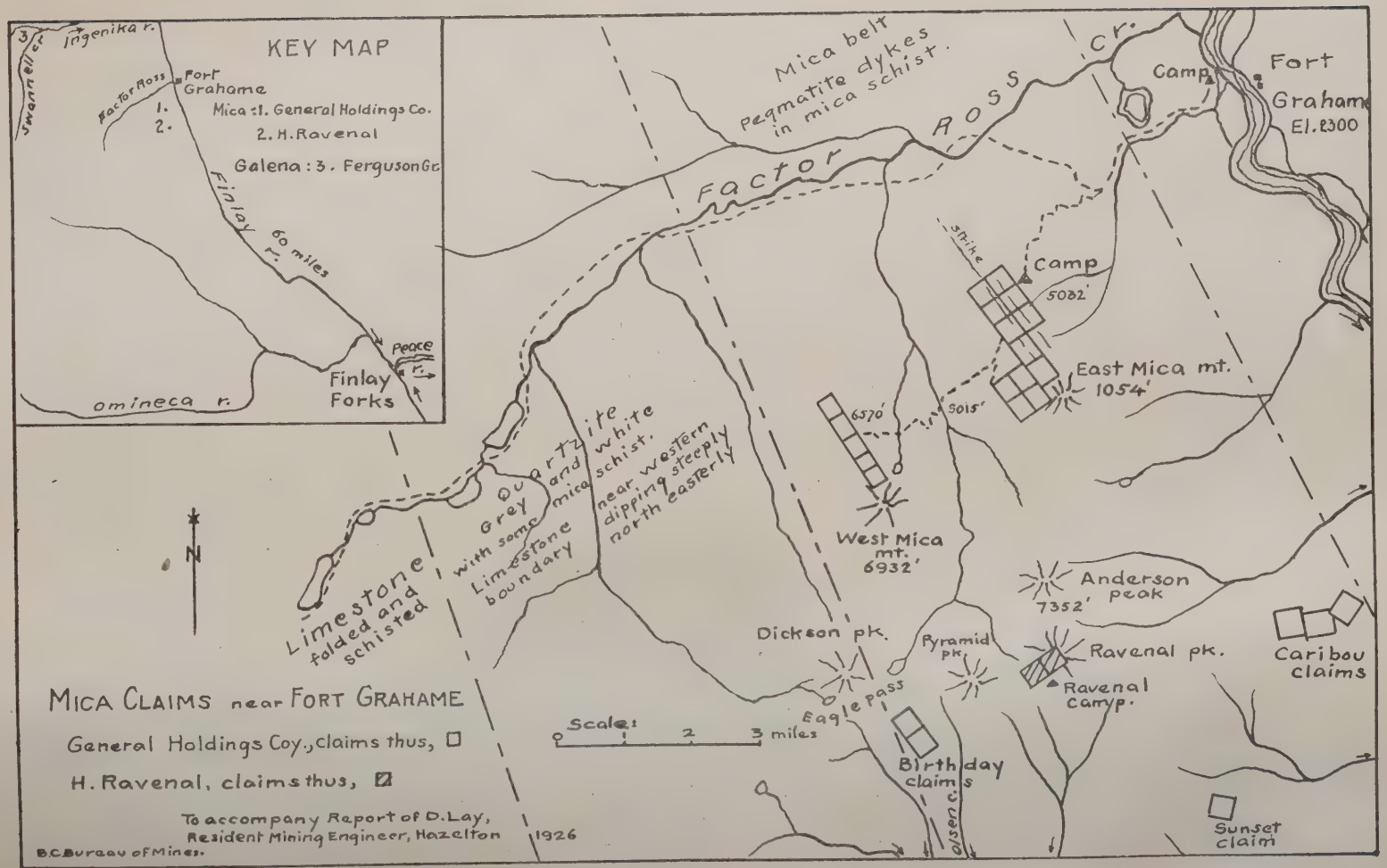
General Holding Co.

This company is incorporated under the laws of Alberta; head office, 701 Tegler Building, Edmonton; president, Major A. C. E. Anderson; manager, G. F. Dickson; secretary, J. Scott. The company owns twenty-three mineral claims on Mica mountain disposed in five groups, as well be seen from map prepared by G. F. Dickson, over an area about 8 miles long and 5 to 6 miles wide. Mica mountain lies about 7 miles south-west of Fort Grahame (elevation 2,215 feet), its summit being somewhat over 7,000 feet above sea-level. It is divided into two portions, known as West Mica mountain and East Mica mountain, by Mica creek, which flows northerly. From this creek the mountain-sides rise precipitously for 2,000 or 3,000 feet.

The claims are situated at altitudes of between 5,400 and 6,800 feet, considerably above timber-line, which is about 5,200 feet. A trail some 7 miles in length leads to the main camp, situated at an elevation of 5,400 feet on East Mica mountain, where the main workings are located.

Geology.—Mica mountain is composed largely of highly metamorphosed gneissic rock, of probable Pre-Cambrian age, which in places has the character of a gneiss and in places that of a schist showing both biotite and muscovite. The entire mountain-mass evidently consists of a large percentage of mica. The occurrence of commercial mica is found in pegmatite dykes, which have a general north-west and south-east trend, southerly dip, and which vary in width from 2 to 14 feet or even more. The pegmatite is composed of muscovite, feldspar, and quartz. The strike of the dykes conforms with that of the planes of schistosity. The dip is southerly, at angles of between 25° and 55°, as observed on the surface. There appears to be a tendency of the largest crystals of mica to concentrate near the walls of the dykes over a width of between 2 and 3 feet in this region. The largest observed crystals were upwards of 5 inches square. All crystals showed much surface weathering.

Development.—A very large amount of surface prospecting has been performed by this company, which for the past two years has employed a force of between fifteen and twenty men at times and a winter force of about twelve men. In 1925 a 32-horse-power gasolene-engine and small compressor were installed and excavational development commenced with a compressed-air drill (Sullivan 2¼-inch). This development comprised crosscutting with a view to penetrate at a depth of 130 feet a pegmatite dyke exposed on the surface on East Mica mountain. The elevation of the crosscut is 5,500 feet. At the time of inspection (in May) the crosscut had advanced a distance of 385 feet, considerably beyond the point at which the dyke should have been penetrated, but the objective had not been reached. Finally a raise was put up from the end of the crosscut


KEY MAP
Ingenika r.
Swannell cr.
Fort Grahame
Factor Ross
1.
2.
Mica: 1. General Holdings Co.
2. H. Ravenal
Galena: 3. Ferguson Gr.
Finlay r.
60 miles
Peace r.
Finlay Forks
Omineca r.
Mica belt
Pegmatite dykes
in mica schist.
Factor
Ross
Cr.
Camp
Fort
Graham
El. 2300
Strike
Camp
5082'
East Mica mt.
1054'
6570'
5015'
West Mica
mt.
6932'
Quartzite
White
Grey
and
mica schist.
with some
Limestone
boundary
near western
dipping steeply
north easterly
Limestone
folded and
schisted
N
Anderson
peak
7352'
Dickson pk.
Pyramid
pk.
Ravenal pk.
Caribou
claims
Ravenal
camp.
Eagle pass
Scale:
2
3 miles
Birthday
claims
Olsen c.
Sunset
claim
MICA CLAIMS near FORT GRAHAME
General Holdings Coy., claims thus,
H. Ravenal, claims thus,
To accompany Report of D. Lay,
Resident Mining Engineer, Hazelton
1926
B.C. Bureau of Mines.

and connected with a shaft sunk simultaneously in the surface exposure. This disclosed the rather astonishing fact that at about 40 feet below the surface the dyke continues downward at right angles to the original dip. This was most unfortunate, as the reasonable expectation was of course entertained that the completion of the crosscut would reach a zone free from surface weathering and that actual shipments of mica might shortly thereafter be made. Moreover, it was important to ascertain the depth of the weathered mica-zone. Incidentally progress both in sinking and raising was impeded owing to the great quantity of water encountered. The manager states that the dyke appears to be going down strongly on its new dip (which may of course again change at a still lower horizon) and carries a good percentage of mica, although this is weathered as might be expected from the open nature of the vein. Owing to bad weather in September operations had to be suspended for the winter but will be resumed in the spring of 1927.

Equipment.—The company has erected very good camp buildings sufficient for a crew of about twelve men on East Mica mountain. There is also installed a Gardner 6- by 7-inch belt-driven compressor, capacity 160 cubic feet of free air a minute, driven by a 32-horse-power Climax 4-cycle gasolene-engine. Sullivan Water Leyner 2¼-inch machine-drills are used underground.

The company's base camp is situated on the west bank of the Finlay river about a quarter of a mile above Fort Grahame, which is the receiving-point for all supplies transported via the river system from outside points. From this camp supplies are taken to the mine by pack-horses, of which the company owns fourteen. Transportation equipment comprises one motor-boat with 20-horse-power Kermath engine (4-cylinder), one scow with 20-horse-power Miller 4-cylinder, four 3½-horse-power Evinrude engines and one 5-horse-power engine, seven scows, and two boats.

The company also has acquired 70 acres of agricultural land some 4 miles below Fort Grahame, which last year yielded 22 tons of hay. It is the intention to grow sufficient agricultural produce for requirements. Under existing conditions it is difficult to provide a sufficiently anti-scorbutic diet in winter.

Quality of Mica and Prospects.—As to the quality of the mica, no doubt whatever appears to exist as to its being excellent, comparing favourably with the best grades of imported Indian mica. It is quite unnecessary to enlarge upon this aspect, which has been fully inquired into and reported upon by Professor J. A. Allan, of the University of Alberta. (*See* Second Annual Report on the Mineral Resources of Alberta, 1920, by J. A. Allan.)

As to commercial possibilities, prospects are distinctly encouraging, although development so far has necessarily been almost entirely superficial. The result of the excavational development now in hand will be awaited with interest. Operations in such a remote region are necessarily carried on under many difficulties and the cost is high. Fortunately mica-mining, unlike metal-mining, does not necessitate any expensive treatment plant to yield a marketable product, and, moreover, the value of the product in relation to its weight is very high. The management is to be congratulated upon overcoming many difficulties and the operation of this company is of signal service to the district.

Ravenal Property. This is a discovery made during the summer by H. Ravenal subsequent to the visit of the Resident Engineer to the district and has not been inspected. It is situated on Mica mountain, about 6 miles south of the General Holding Company's main camp. The manager of the latter has inspected it and reports the exposure as showing very fine sheet mica, although of course in weathered condition. It is situated at a high elevation, but can be developed by an adit drift-tunnel. It is evident from photographs that the mica crystals are of quite exceptional size. The exact situation of the property is shown on the map.

Lead.

A remarkably fine surface showing of galena occurs on the Ingenika river, about 45 miles distant from Fort Graham, on the *Ferguson* group. This group consists of five claims—*Trout Lake No. 1, Bluebell No. 1, Bluebell No. 2, Ferguson,* and *Muir*—owned by J. Ferguson. The property is now under option to the Selkirk Mining Syndicate, Limited Liability, with headquarters at 214 Campbell Building, Victoria. C. W. Frank is manager of the syndicate and Charles McKay is secretary. This syndicate plans to carry out development of the property early in 1927. This will consist of surface work, stripping and crosscutting the ore-zones. The

claims are situated about 20 miles up the Ingenika river from its confluence with the Finlay river. They are on the south side of the river and distant from it about 1½ miles by good trail.

On an elevated plateau-like surface, some 500 feet vertically above and south of the Ingenika river, occur several knolls which rise between 200 and 300 feet above the plateau. The whole region has been subjected to intense glaciation and the Ingenika river in this region has evidently cut down through a valley filled with glacial drift; terraces of resorted gravel, which might be worth prospecting for placer gold, occur some hundreds of feet above the present river-bed.

On one of the knolls referred to, which is composed of limestone, is situated the *Ferguson* group. The size of the top of this knoll, which is fairly flat and covered with much vegetation, is approximately 220 yards by 45 yards. The limestone-beds strike north-westerly and dip north-easterly in general at angles varying between 25° and 35°. At one point the limestone-beds dip in the opposite direction to this, which suggests folding and the development of a synclinal-anticlinal structure. Bands of the limestone up to 25 feet in width as measured on the surface are mineralized very heavily in places with galena, a small amount of zinc-blende, a little copper pyrites, and a heavy stain of ferric oxide. There are certainly three such bands, possibly four, and in addition one less heavily mineralized. A very severe handicap to examination, especially if one is pressed for time, is the fact that very little has been done in the way of open-cutting to expose critical points. These bands appear generally to conform with the bedding-planes of the limestone, although one or more exposures may be fissures which cut across the limestone-beds. The heavy stain of ferric oxide mentioned also tends, in the absence of further development, to mask matters. These exposures are on top of the knoll and extend down one side to some extent, the difference between the highest and lowest exposure, as determined by aneroid barometer, being about 100 feet. The distance apart of these bands on the surface is between 75 and 88 feet. Assuming a dip of 30°, therefore, the actual width of the bands would be about 12 feet and their distances apart about 40 feet. This is on the assumption that all are inter-bedded. Should this not be the case, the true width may more nearly approach 25 feet and the distance apart will be greater than 40 feet. It is to be noted that one band and the containing limestone dips in the opposite direction to the others. Assuming more or less intense folding with the development of an anticlinal structure, this band and one of the others might be one and the same.

The scanty exposures and limited time rendered it impossible for the writer to form anything like an accurate idea of the length of the more leady portions of the bands. At present such lengths are limited and determined by the size of the knoll. Further, the difference in elevation between the point of highest and lowest exposure is small, only 100 feet approximately. There were said to be no exposures at the base of the knoll, but a close examination of the region more immediately surrounding the base of the knoll is regarded as being of much importance, with a view to pick up the continuation of a band or bands on the plateau. After some preliminary surface prospecting, diamond-drilling could be undertaken with advantage both on the knoll and at the base. There seems every likelihood that a very considerable tonnage of lead ore of low silver grade is contained in the knoll itself and there may be underlying beds of ore not exposed on the surface. But in the nature of things, the knoll not being large, the tonnage therein is limited. Consequently much depends upon proving existence of ore beyond the confines of the base of the knoll and in depth.

It is apparent that glory-hole or quarrying methods of mining could be applied to the knoll itself, and, further, that if in the future the question of smelting *in situ* is a matter for consideration a self-fluxing mixture is available and a low zinc content.

There appear to be sound grounds for entertaining the idea of the likelihood of the existence of an ore-body of magnitude in this region owing to the points of resemblance to the East Kootenay region containing the famous *Sullivan* mine. There is geographic, geologic, and topographic relationship. Mineralogically, however, there is no similarity between this ore and the *Sullivan* ore. The former shows no pyrrhotite and crystallization is comparatively coarse; it is therefore an ore which would probably be amenable to water-concentration. It has certain points of resemblance to the *North Star* ore, a neighbour of the *Sullivan*. It is perhaps not foreign to the matter to state that the writer some twenty-seven years ago inspected the *Sullivan* mine, having at that time to report upon the smelting and concentrating possibilities. The *Ferguson* group merits the most careful and searching scrutiny with a view to determining the

advisability of a little immediate surface work, followed by diamond-drilling. The costs of operation in this region have been fully dealt with in the preface to this section.

The property is 20 miles distant from the Finlay river. Under existing conditions—in fact, unless a railway is constructed connecting Finlay Forks or Hudson Hope with existing railway-lines—actual production from this property can hardly be considered. Hope in any immediate diamond-drilling lies in proving the existence of ore-bodies of such dimensions that this fact considered in conjunction with other factors affecting the question would be considered sufficient to justify the construction of a railway running through this northern country.

The elevation of the Ingenika river immediately below the claims was found by aneroid to be 2,450 feet; that of the base of the knoll 2,950 feet; that of the summit of the knoll 3,150 feet.

The following sample was taken across what appeared to be the best exposure of ore, and represents a surface width of 25 feet: Gold, trace; silver, 8 oz. to the ton; lead, 16 per cent.; zinc, 4 per cent. A sample taken across a width of 3 feet of the portion containing most galena assayed: Gold, trace; silver, 12.2 oz. to the ton; lead, 32 per cent.; zinc, 3 per cent.

The following samples were shown to the Resident Engineer by the owner as being a number taken by the engineer of an important operating company who examined the deposit a few years ago and who is well known to the writer. These samples represent various exposures, but give an excellent general idea of the showings:—

Description.	Gold.	Silver.	Lead.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.
Across 10 feet	Trace	14.0	26.1	7.7
Across 17 feet	Trace	8.6	25.0	8.0
Across 2.5 feet	Trace	21.4	52.8	2.1
Across 9 feet	Trace	Trace	.....	13.6
Cube galena	Trace	25.0	75.2	1.5

Lookout Mountain.—Two near-by mountains were climbed in order to gain an idea of the surrounding formation. Lying immediately south of the *Trout Lake* group knoll and but a few hundred yards away is Lookout mountain. The rounded summit was found to have an elevation of 3,500 feet. On the summit was an "erratic" of granodiorite, probably 2 tons in weight, with particularly sharp edges, convincing proof that the continental ice-sheet overrode the *Ferguson* knoll. Another feature of interest on this mountain is the existence of what may be termed a "glacial pot-hole." On one side near the summit chemical action in the limestone, of which the entire mountain is composed, has evidently formed a shaft of square cross-section about 6 by 6 feet in size, which extends downward to great but undetermined distance. The collar of this natural shaft has been "pot-holed" conspicuously, evidently by glacial streams. The strike of the limestone-bedding is north-easterly and dip westerly at about 25° or 30°.

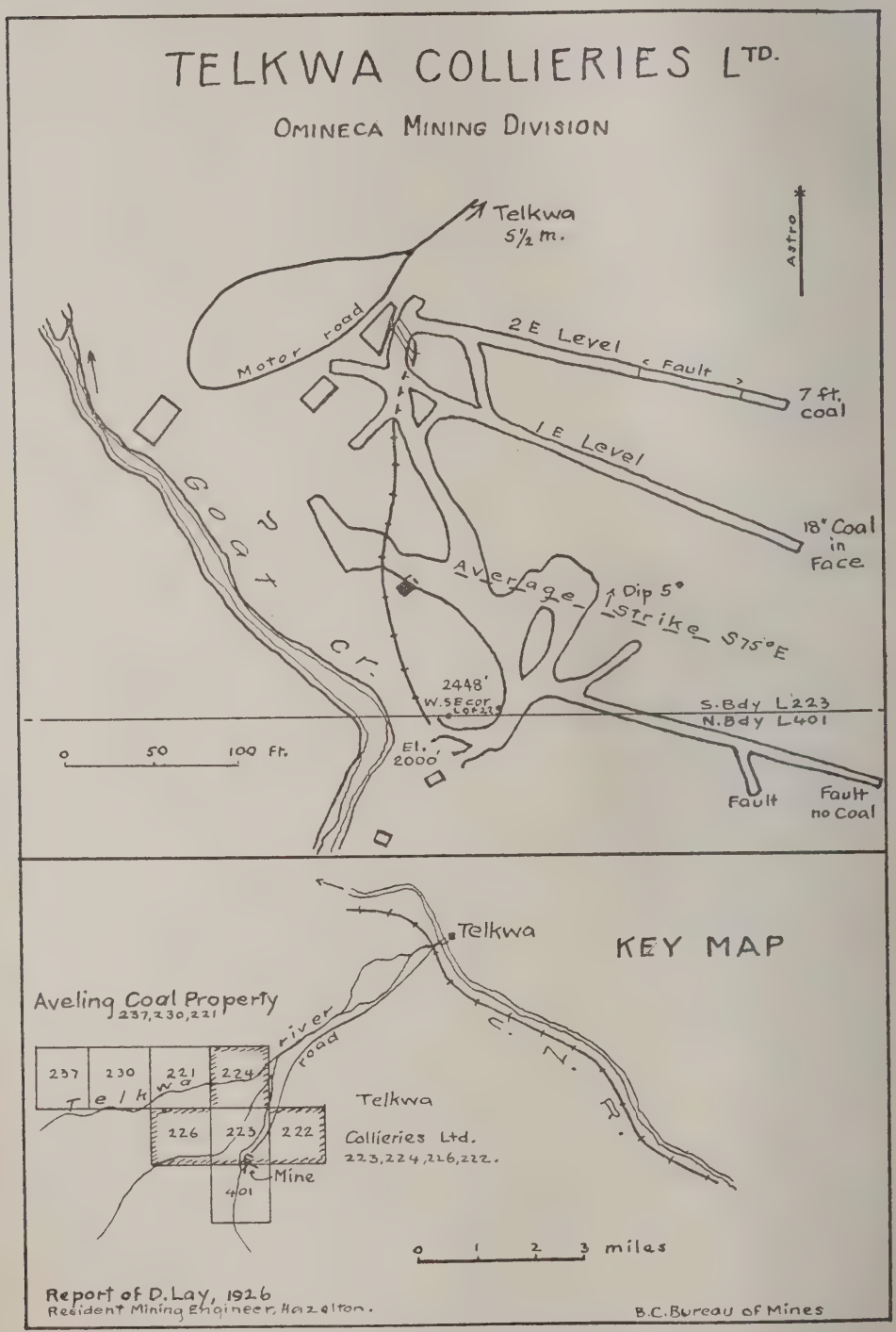
Ingenika Crag.—This mountain is situated on the north side of the Ingenika river, immediately opposite J. Ferguson's camp on the south side. The sides of the mountain fronting the river have a peculiar furrowed appearance. An ascent was made up to rock-exposures to ascertain their composition and the reason for the furrowing. The country-rock was seen to be composed of interbedded highly metamorphosed schistose limestone and a hornblende-schist. The furrows are presumably due to the more ready weathering of the limestone. The strike of the formation is N. 75° E. (mag.) and dip about 10° north-west.

Peculiar Flotation Phenomena on Ingenika River.—The waters of this river are extraordinarily clear. At the time of inspecting this region the water was rising, and it was noted that the sands on the banks, consisting of apparently clean quartzose particles with a fair amount of black sand, were floating on the surface of the water in quite large quantities. Time was entirely lacking to study the reason; possibly it is due to some film on the particles, but it appeared to be an entire reversal of the principles upon which the oil-flotation process depends.

Coal.

In the 1924 Annual Report will be found a list of the various coal areas of the district and a list of reports thereon.

This year about the same output of coal was made as in 1925, but it seems reasonable to anticipate a considerable increase during 1927 owing to the growing demands of the local market.


TELKWA COLLIERIES LTD.
OMINECA MINING DIVISION
Telkwa
5½ m.
Astro
Motor road
2 E Level
Fault
7 ft.
coal
1 E Level
18" Coal
in
Face
Goat
Cr.
Average
Dip 5°
Strike S75°E
2448'
W.SE cor
coal
S.Bdy L223
N.Bdy L401
0 50 100 Ft.
El.
2000'
Fault
Fault
no Coal
KEY MAP
Telkwa
Aveling Coal Property
237,230,221
river
road
C. N. R.
237
230
221
224
226
223
222
401
Mine
Telkwa
Collieries Ltd.
223,224,226,222.
0 1 2 3 miles
Report of D. Lay, 1926
Resident Mining Engineer, Hazelton.
B.C. Bureau of Mines

The entire output comes from Telkwa Collieries, Limited, the president and general manager of which is J. McNeil, Telkwa. Aid was given by the Department of Mines towards improving the road between the colliery and Telkwa. It is now a good motor-road and a small force will be employed at the colliery the year round, instead of during winter months only as heretofore, as it is now possible to haul at all seasons of the year with motor-truck.

The output for the year was 1,260 long tons as compared with 1,581 long tons in 1925.

Telkwa Collieries, Ltd.

The property of this company consists of Lots 222, 223, 224, and 226, each lot being 1 square mile in area. A sketch-plan of the property accompanies this report.

In the year 1918 operations were started at the Mud Creek Colliery and continued until 1922, when they were suspended. During this period a total tonnage of 3,961 long tons of coal was shipped. This colliery was not examined by the writer, and this report deals solely with the company's colliery on Goat creek, and more especially its economic aspects.

The geology of the district is fully described in the bulletin by W. W. Leach, "The Telkwa River and Vicinity," published by the Geological Survey.

Goat Creek Colliery.—As will be seen from the map, this colliery is situated at the extreme south end of the property and approximately in the centre. It is distant 5½ miles by a good motor-road from Telkwa. The steepest grade on this road does not exceed 6 per cent. Present plans contemplate the operation of this colliery with a small force of about six men the year round, which should result in an annual output of about 5,000 tons, which it is hoped the local market between Prince George and Prince Rupert will absorb. There are bunkers of 30 tons capacity on the railway siding at Telkwa and bunkers at the mine of 90 tons capacity. A motor-truck can make the round trip between mine and railway bunkers within the hour. Surface buildings comprise boiler-house with 8-foot by 42-inch vertical boiler for operation of duplex steam-pump, with wash-room attached, log cabin bunk-house, cook-house, blacksmith-shop, store, and stable; all of about sufficient capacity to accommodate a force of about six men.

Workings.—At an elevation of 2,000 feet (elevation of Telkwa is 1,666 feet) there is exposed on the east bank of Goat creek a seam of clean coal having an average width of somewhat over 7 feet. The surface exposure is upwards of 200 feet in length. The average strike of the seam is about N. 75° W. (true), with a dip between 5° and 7° to the north-east. The coal-measures are soft and imperfectly lithified, and consist of grey clay shales and sandstones and carbonaceous shales with clay ironstone nodules. They belong to the Skeena series of Lower Cretaceous age.

Operations at this colliery commenced in the year 1923, the seam being developed by two adit-tunnels close together. Early development consisted essentially of one main slope, with branches therefrom. The more systematic scheme of development subsequently carried out, and now in progress, will be apparent from the map. This consisted of putting an air-shaft through to the surface for ventilation, the driving of three levels eastward following the strike to delimit the profitable coal area in an eastward and northward direction, and more especially to furnish coal. Reasons for keeping away from Goat creek on the west will be obvious. The roof of the explored area to date is only about 30 feet below the surface. Having regard to this fact and the soft nature of the measures overlying the coal, the earlier operations did not proceed with sufficient caution, with the result that the workings caved from the surface at one spot. The roof of the seam is a grey clay shale which stands up reasonably well, but it is evident that no liberties can be taken in mining. Farther to the east the hill rises quite steeply, so that there is prospect of stronger cover.

Of the three levels driven eastward, it will be noted that the most southerly is not driven on the company's property. It was a good piece of development nevertheless. At its extremity coal was abruptly terminated by a fault, with, it is stated, an apparent downthrow. The cross-cut run south from this level at the point shown on the map, a distance of 30 feet, likewise encountered a fault terminating the coal. Again, a short tunnel run in from the surface at a point some 150 feet south of the main working-tunnel also shows the coal to be abruptly terminated. These workings appear to demonstrate that in a southerly direction extensive interruption is to be expected, although no trouble may be experienced in again picking up the coal. This point, however, does not concern Telkwa Collieries, Limited. What is important to the latter is the eastward and northern extension of coal. At the time of inspection in August the faces of all eastward levels, with the exception of No. 2 East, were inaccessible owing to

water, but it is stated that the face of No. 1 East level showed disturbance and a width of 1.5 feet of coal only. No. 2 East level showed at the face, 124 feet east of Main slope, evidence of approaching disturbance, although the seam was holding its normal width. Shortly after date of inspection, at 130 feet east the coal was faulted; a distance of 60 feet was then driven through the fault and the full width of the seam, approximately 7 feet, was again picked up, and the last advice received was that that width of coal had been maintained for a distance of 30 feet. This is highly satisfactory and indicates that no difficulty should be experienced north and south of this level within the company's ground in picking up the coal at points east of the fault, which seems to have, as far as can be judged at present, an approximately north-and-south strike. The downthrow experienced on No. 2 East level was about 9 feet, it is stated. Further, to the east much thicker cover is being rapidly approached; consequently in this region there appears to be no likelihood of removal of measures due to any surface erosion, such as may have taken place at some points south of this company's holdings.

Present operations will focus on Nos. 1 East and 2 East levels, which will be advanced with crosscuts between them, the idea being to develop the ground to the east and incidentally keep up a sufficient output of dry coal, these workings being drained into a sump at the end of the Main slope. Ventilation will be secured by natural means by putting in a brattice in the Main slope between No. 1 East level and the air-shaft, thus causing the air-current between shaft and adit-tunnel to pass through the workings mentioned. The bearing of No. 1 East level was found to be S. 68° E. (true); that of No. 2 East level S. 78° E. (true).

All mining operations are carried on by hand, auger-drills being used for drilling. Cars of coal are hauled from mine to bunkers by a horse.

Width of Seam and Nature of Coal.—The seam has an average width of somewhat over 7 feet and is remarkably clean, there being a width of only some 6 inches of bone, which occurs about 18 inches from the bottom. Measurement of the seam at the working-face in crosscut from No. 2 East level in August was as follows:—

Top	66 inches of clean coal.
	6 inches of bone.
Bottom	15 inches of clean coal.
Total width of clean coal	81 inches.

The nature of the coal is a coking bituminous coal, as will be seen from the following analysis of samples taken of the above 81 inches of coal: Moisture, 1.1 per cent.; volatile combustible matter, 24 per cent.; fixed carbon, 63.9 per cent.; ash, 11 per cent.; B.T.U., 13,385.

It is to be noted that the above percentage of ash is rather higher than average samples from this mine, which usually run under 10 per cent. However, it might be noted that this is not higher than the average ash content of other coals being mined in the Province. An interesting comparison of British Columbia coals is given on pages 314 and 315 of the Annual Report for 1925.

The physical properties of Telkwa coal are good. It is hard, scarcely blacking the hands when handled, stands transportation well, and is in every respect a good general-purpose coal. The coal is loaded with forks at the mine-face, the lump being supplied for domestic purposes and the fines forming blacksmith-coal.

Tonnage of Proved Coal.—Referring to the map, it will be seen that the area proved by excavational development to date of inspection is approximately 280 feet by 240 feet, or, say, 1½ acres. Allowing 100 tons of coal per inch of thickness per acre and an average thickness of 81 inches of coal, we have a total of 100 by 81 by 1½, or 12,150 tons of coal. Of this, there had already been extracted up to January 1st, 1926, 3,144 tons (long). Making some allowance for extension beyond the confines of the proved area, it seems reasonable to assume that there is 10,000 tons of recoverable coal in sight. In this connection it is to be especially noted that the recent picking-up of the coal-seam east of the faulted region is satisfactory, and it seems most probable that development will shortly indicate that a far more liberal estimate is allowable. However, in this region, in the absence of positive delimitation of coal, calculations as to tonnage in sight should be made with caution.

In view of the old adage, "a colliery well bored is half won," it might be urged that it would be well to delimit the coal area by drilling from the surface at various points. This would be of great assistance, but it is doubtful if the expense is justified at present. The general aspect

Ferguson's Property on Ingenika River.

Peace River Canyon.

of the coal situation and the question of market are the dominant factors which must control the policy to be adopted. There is no market at present for more than 5,000 tons of coal annually, and it is to be noted that excavational development is taking place at a profit and at a sufficiently rapid rate in view of the limited market. Conditions may change of course. A strong demand for coke in the north, for example, might justify expansion, but the latter should not be contemplated without careful study of the situation. It is therefore deemed that the policy followed by the management is wise and should be continued for the present. To make a profit is of course the aim and essence of this policy.

The Skeena Development Syndicate, Ltd. (London, England).

This syndicate owns the property formerly known as the Aveling coal property, situated on the north side of the Telkwa river, 7½ miles by good wagon-road from Telkwa. It is readily accessible and the quality of the coal—bituminous—is excellent. A full report will be found in the Annual Report for the year 1921. The location of the property, consisting of Lots 221, 230, and 237 (1,920 acres), is shown on key-map. The representative is F. B. Chettleburgh, of Telkwa, who has been doing some prospecting on the property during the season with the object of determining the relationship of the various outcrops.

Zymoetz (Copper) River Coalfield.

This property is now controlled by the Yorkshire & Pacific Trust Company, of Vancouver, of which F. B. Chettleburgh is the local representative. Some prospecting was done by the latter on the property during the season of 1926. The property is described in the Annual Reports for the years 1914 and 1922.

Lake Kathlyn Coalfield.

This coalfield, situated on the central eastern slopes of Hudson Bay mountain, is distant some 2½ miles by good road from Lake Kathlyn Station on the Canadian National Railway and some 5½ miles from Smithers, a divisional point. The cabin at the foot of the exposures can be reached in half an hour by car from Smithers.

The most important portion of the coalfield is that covered by Licences 11172 and 11198; that is, Section 16 and half of Section 8 and half of Section 17, which two latter half-sections adjoin each other, and Section 16, the total area being 2 square miles. The co-owners are George H. Ballard and Frank X. Frank. By agreement British Columbia Anthracite, Limited, has acquired the right to mine coal, paying for the same on a royalty basis.

Geology.—The coal-seams occur in the Hazelton formation of Jurassic age, an exception to the usual mode of occurrence of coal in this district—namely, in the Skeena series of Lower Cretaceous age. The coal-measures consist of highly carbonaceous slates and highly metamorphosed sandstone, virtually quartzite.

The measures are situated in immediate proximity to Lake Kathlyn glacier, and are sharply uptilted at angles approaching 60° against the central eastern slopes of Hudson Bay mountain and are abruptly terminated at their upper end by the Hazelton volcanics. The measures are exposed on both sides of the lower portion of the glacial cirque, the upper portion of which is still occupied by Lake Kathlyn glacier. The lower portion of the cirque takes on the form of a deep gorge, some hundreds of feet in depth and width, abruptly terminated at its upper end by a vertical rise to the end of the glacier. On either side of the latter a glacial stream issues, forming two waterfalls many feet in height. The latter unite at the bottom to form Glacier creek. The whole setting constitutes a scene of great natural beauty. The trend of the gorge is north-east and Glacier creek flows in this direction. The gorge exposes not only the coal-measures, but also the termination of the latter by the Hazelton volcanics. The latter dip south-west at an angle of about 30° to 35°. The strike of the line of contact appears to be about N. 35° W. (true), but little different from the strike of the coal-seams, which is N. 45° W. (true), but the latter dip north-easterly.

While the coal-measures are exposed on both sides of the gorge, outcroppings of true coal occur on the south side only, although a seam of highly carbonaceous slate was found on the north side of the gorge at an elevation of 3,000 feet, similar seams of which occur on the south side. The former occurs within a few feet of a mineralization of zinc-blende in the volcanics. Pieces of each are to be found together, the black-jack of the one being curiously like the compressed carbonaceous matter of the other, which shows minute seams of anthracite.

Rocks forming the coal-measures were found to outcrop at points about 1 mile apart, measured along the strike. Their extent is quite possibly greater than this. No attempt was made to delimit the area of the coal-measures by field observations, which, except near the creek, are rendered difficult owing to dense vegetation and glacial drift.

Coal-seams.—These strike N. 45° W. (true) and dip at angles varying from 45° to 60° north-east. They consist in part of true semi-anthracitic coal and in part of highly metamorphosed carbonaceous slate. Pronounced schistose structure and slickensiding are characteristic features, just what might be expected having regard to the regional metamorphism caused by the near-by intrusion of the igneous core of Hudson Bay mountain.

All important outcrops occur on the south side of Glacier creek and within a vertical range of 500 feet.

As determined by aneroid barometer, the elevation of the more important showings was as follows:—

	Feet.
Lake Kathlyn Station	1,650
Coal Camp	2,450
Forge seam	2,490
Ballard seam	2,675
Ten-foot seam	2,750
Three Tunnels seam	2,800
Frank seam	2,950

Of the above, by far the most important are the Ballard seam and the Frank seam. The coal, as will be seen from the analyses given, is rather remarkable in the respect that the moisture indicates a lignitic coal, whereas fixed carbon and volatile matter place it in the semi-anthracitic class.

The workings consist merely of one tunnel run a distance of 40 feet on the Forge seam, which does not show any commercial possibilities, and also a tunnel 70 feet in length on the 4-foot Ballard seam. It is also understood that three short tunnels were originally run on the Three Tunnels seam, but these were caved at the time of inspection. With the exception of these workings, it should be understood that all exposures are purely surface exposures at points virtually in the same vertical plane passing through all seams. The thickness of the strata in which the seams occur is between 500 and 600 feet. The glacial cirque forms a huge natural crosscut in the measures.

Forge Seam.—This seam, which is at an elevation of 2,490 feet, is the uppermost one geologically. It consists of highly metamorphosed graphitic material and some true coal, the total width being 5 feet, but offers no hopeful commercial possibilities. The strike is N. 45° W. (true) and the dip 45° north-east.

Ballard Seam.—The elevation of this seam is 2,675 feet. A tunnel 70 feet in length has been run on it, which has a width of 4 feet at the portal and 3 feet 6 inches at the face. A width of 3 to 4 inches of bone is continuous from portal to face. On the hanging-wall side of this seam, distant 35 feet, is another seam 2 feet in width of schisted coal-like material, and between it and the Ballard seam there occurs another small seam of similar material. Only the Ballard seam would appear to have any commercial possibilities. The strike of this seam is N. 55° W. (true) and the dip 50° north-east. The following samples were taken:—

Description.	Moisture.	V.C.M.	F.C.	Ash.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Across 4 feet, 20 feet in from portal	9.9	2.8	66.6	20.7
Across 3.5 feet at face	10.6	3.3	71.8	14.3

Bone was excluded from both samples. The calorific value of the first sample was 13,300 B.T.U. It will be noted that this seam shows a very distinct tendency to improve in quality in depth.

Ten-foot Seam.—This seam, which is at an elevation of 2,750 feet, consists of mixed bone and schistose coal and was not sampled.

Three Tunnels Seam.—The elevation of this seam is 2,800 feet. Three short tunnels were originally run on it, but all were caved at the time of inspection and the only exposure open to inspection was that over the face of the central tunnel. This shows a width of 4 feet, consisting of 18 inches of schistose coal, 24 inches of bone, and a few inches of coal on the foot-wall. So far as can be judged, similar seams occur on both hanging- and foot-wall sides, separated from the central seam in each case by about 10 feet of country-rock.

Frank Seam.—This seam, which is at an elevation of 2,950 feet, contains the best coal-showing and it is particularly unfortunate that it should be split up into a number of different seams separated by bands of slate. While a total width of 86 inches of coal is exposed at this point, it is split up as follows in a total width of 271 inches:—

On the hanging-wall	26 inches of coal.
	20 inches of slate.
	20 inches of coal.
	84 inches of slate.
	12 inches of coal.
	48 inches of slate.
	22 inches of coal.
	33 inches of slate.
On the foot-wall	6 inches of coal.
Total	271 inches.

This seam is exposed merely by open-cut on a very steep slope. It appears to strike N. 30° W. (true) and dips 60° to the north-east.

From the analyses below given it is apparent that the 22-inch seam on the foot-wall side is radically different from that of any other seam on the property. The following samples were taken of the Frank seam:—

Description.	Moisture.	V.C.M.	F.C.	Ash.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Seam 22 inches wide on foot-wall	12.5	7.0	74.3	6.2
Seam 22 inches wide on foot-wall (selected pieces)	6.9	10.7	79.2	3.2
Seam 20 inches wide in middle	15.1	10.0	56.8	18.1
Seam 26 inches wide on hanging-wall	12.9	9.1	54.9	23.1
Seam 26 inches wide on hanging-wall (selected pieces)	14.0	8.9	63.9	13.2

A sample of 50 or 60 lb. weight of picked pieces of coal from this 22-inch foot-wall seam was burnt in a small domestic coal-stove. Except that it was a little more difficult to kindle than Welsh anthracite, its behaviour was entirely satisfactory. It exhibited the usual characteristics of anthracite, giving a hot fire, with little or no smoke, and a very short flame. It could be described as a good commercial grade of anthracitic coal. In physical appearance the coal bears but little resemblance to anthracite. It shows pronounced schistose structure, crumbles readily, and there is much development of free carbon so that it soils the fingers. While its burning qualities are good in the lump, it would not stand handling well.

Commercial Possibilities.—In connection with analyses of samples it is only fair to point out that, with the exception of those from the Ballard seam, they are all surface samples and therefore an improvement in depth is to be expected. Further, samples taken in the tunnel on the Ballard seam do afford some indication of an improvement in this respect. With the exception of the 22-inch portion of the Frank seam, all samples show a high ash content.

As to the question of available tonnage, it has already been pointed out that all exposures are in the same vertical plane, practically speaking. Obviously, therefore, in the absence of

further development, excavational or drilling, no statement as to tonnage can be made, nor can even an intelligent guess be made. There does not appear to be any evidence of local faulting.

As far as cheap mining facilities and transportation are concerned, Lake Kathlyn coalfield is well situated. Transportation is already provided; there is abundance of mine-timber on the property and near-by water-power can be rendered available. Further, the topography is highly favourable to cheap extraction to a depth of about 500 feet vertically below the highest coal-outcrop by a crosscut adit-tunnel. The length of such required to penetrate all seams would be about 600 feet. Alternatively, any individual seam can be followed inwards by a drift from the surface. Of the individual seams, the most hopeful prospects are offered by the Ballard and Frank seams, of which the latter is badly split up.

Market.—An all-important question for any coal prospect is that of market. There is this essential difference between coal and metal mining: In the latter case there is no such thing as competition; in the former case your neighbour is your competitor. In the interior of northern British Columbia the possible market for coal, unless the fuel is of quite exceptional quality, is extremely limited at present and purely local.

Conclusion.—It is considered that the owners or a syndicate fully informed as to the facts must do further development-work before more than a guess at commercial possibilities can be made. Development either in the form of crosscutting, drifting, or diamond-drilling should have as its objectives the proving of the seams in depth to the lowest horizon at which it is possible to win coal by an adit-tunnel, likewise development of, at any rate, one seam at points a considerable distance apart along its strike. One thing is certain, this property is a prospect, not a mine.

PEACE RIVER MINING DIVISION.

A trip was made through the Peace River Mining Division by the Resident Engineer on the return from Fort Grahame section of the Omineca Mining Division.

A full account of the topographic and geologic features of the Peace River Mining Division will be found in the Annual Report for 1923. Full particulars of routes into this Division, and cost of transporting supplies thereto, will be found in the Annual Report for this year under "Fort Grahame Section."

The main object of the visit in 1926 was the inspection of the developments recently accomplished by the Peace Canyon Mining and Transportation Company, Limited, which is engaged in operating the Gething coal leases at the Rocky Mountain canyon.

A short stop was made at the mouth of the Carbon river, where C. G. Jones has a ranch. An intimate local knowledge of the Carbon River coal-showings is possessed by C. G. Jones (address, Carbon River, B.C.), who is available as guide to those interested in this coalfield. Particulars of the latter will be found in the 1923 Annual Report.

Some small-scale activity in placer-mining along the bars of the Peace river was evident at the time of the visit in May. Later in the season it is understood that R. R. Hedley and associates were engaged in investigating placer-mining possibilities in this district.

The Peace Canyon Mining and Transportation Company, Ltd.—The president of the company is George Aylard and the manager and secretary-treasurer is Leslie Aylard; office at Hudson Hope, B.C. This is a private company operating the Gething coal leases, consisting of 40 square miles of ground on both sides of the Peace river at the Rocky Mountain canyon.

This coalfield is very fully reported upon by Dr. F. H. McLearn, of the Geological Survey (Summary Report, Part B, 1922), and also by John D. Galloway in the Annual Report for 1923. Since these reports were written a new seam 7 feet in thickness was discovered two years ago. This outcrops at water-level, 2 miles below the canyon on the south side of the river, and what is probably the same seam is visible at one point in the canyon on the north side of the river. Development-work on this seam consists of two tunnels about half a mile apart, one 25 feet and the other 60 feet in length. In spite of a determined attempt, involving some 24 miles of travel, to inspect these new workings, the idea had to be abandoned after getting to the head of the canyon on the north side of the river. Owing to the very stormy weather prevailing it was found to be quite impossible to cross the river.

Particulars relating to this seam were furnished by the manager. It is between 200 and 300 feet below the Grant seam. There are five benches in the seam. These were sampled

separately by the manager and samples analysed by the Department of Mines with the following results:—

No.	Moisture.	V.C.M.	F.C.	Ash.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.
1	0.6	17.04	79.0	3.0
2	0.6	16.90	80.0	2.5
3	0.6	17.20	75.4	6.8
4	0.9	14.10	82.5	2.5
5	0.6	19.60	75.8	4.0

These analyses indicate a high-carbon bituminous coal of similar high quality to that of the other seams of this field.

Present plans centre on the extraction of coal from the Grant seam, which outcrops on the north bank of the river in the lower part of the canyon, and which has already been opened up by an adit-tunnel and cross-drifts therefrom at the river-level. (Refer to sketch in 1923 Annual Report.) The Dominion Government has promised assistance in clearing the river-channel up to coal-bunkers, which will be situated on the banks of the river. When this is done the large stern-wheel steamer "D. A. Thomas," now plying on the Peace river as far up as Hudson Hope, will be able to get up to the bunkers and take scows of coal to Peace River, a terminal point of the Edmonton, Dunvegan & British Columbia Railway. The coal company has installed a small sawmill and lumber to construct bunkers of 300 tons capacity has already been sawn. A haulage-way from mine adit to bunkers has also been graded. At the time of inspection the company was engaged in constructing a branch wagon-road from the portage road (between Hudson Hope and head of canyon) to its property, a distance of about 9 miles, and in connection with which a grant was given by the Department of Mines. When this road is completed good means of transporting supplies from Hudson Hope will be afforded, the distance from the latter place being 15 miles.

It is unnecessary to enlarge upon the fact that this coal is of quite exceptional quality and an ideal fuel for almost every purpose except coke-manufacture, or that the extreme regularity of the measures indicates ideal mining conditions. While the carrying-out of the contemplated plans outlined will leave the company with transportation only during the open season of the river—somewhat over five months of the year—nevertheless the position will be very much better than it is now. It is also reasonable to anticipate that the quality of the coal will become much more widely known and sought after.

CARIBOO MINING DIVISION.

The placer production for the year of the Cariboo Mining Division was $170,993, as compared with $151,627 for 1925.

The chief contributor was the Kafue Copper Development Company's dredge operating on Antler creek. Hydraulic operators had a very poor fall run owing to severe weather in September, and the large operator, John Hopp Mines, on Lowhee creek had much dead-work to accomplish. For these reasons the yield from hydraulic mines is less than usual.

A gratifying feature of placer-mining was the amount of Keystone-drilling undertaken at various points to determine dredging possibilities. A considerable amount of interest was manifested in lode-mining.

Prince George Section.

The name of this section has been changed since last year from "Fort George section" to "Prince George section." It includes all properties normally tributary to Prince George, a divisional point on the Canadian National Railway and an important centre.

Largeasse. This group, owned by Louis Behn and P. Dessauve, is situated 4 miles west of Prince George. On the banks of Winchester creek there is exposed a quartz vein, 2 feet in width, in graphitic shale country-rock. The vein strikes N. 25° E. (mag.) and dips south-easterly. Samples of the quartz showed only traces of gold and silver.

Government Creek.

Rush. This group consists of four claims and is owned by T. Rush, J. Peters, and associates. It is situated on a small tributary of Government creek and is reached by a short branch road and trail from the main Prince George–Quesnel road. In graphitic shale country-rock there is exposed a quartz vein on the surface, striking N. 60° W. (mag.), dipping north-east, which shows small bunches of galena and zinc-blende. An adit-tunnel has been run a distance of 20 feet and at the end a winze is sunk 30 feet, at the bottom of which is exposed a small seam of galena and zinc-blende 3 inches in width, a sample of which assayed: Gold, 0.10 oz.; silver, 41.5 oz. to the ton; lead, 21 per cent.; zinc, 3 per cent. A drift 40 feet in length at the bottom of the winze fails to disclose anything of importance. The mineral-showing hardly warrants any further following up in depth at this point.

Hixon Creek.

Ceyanne. This group (formerly *Belmont* group), owned by E. Hann and J. Strbac, is situated on Hixon creek, about 4 miles above the junction of Government and Hixon creeks. On the left bank of the creek a tunnel has been run a distance of 135 feet in highly oxidized decomposed rock, classified by L. Reinecke, of the Geological Survey, as quartz-sericite schist, in which occur numerous quartz stringers. It was stated that values occur in both country-rock and quartz stringers. Samples were taken of the country-rock from face to portal and also a composite sample of the stringers. Both samples showed only traces of gold and silver.

Placer Lease No. 2118. This lease is owned by E. Hann and J. Strbac and is situated on Hixon creek, about 1½ miles above the old gold stamp-mill. On both sides of Hixon creek in this region the country-rock is a gneissic rock shading into a mica-schist and bears a very strong resemblance to the gneissic rocks on Mica mountain, Fort Grahame section, and may be of the same age. The creek-gravels overlie at one point a wide band of white clay, which is undoubtedly decomposed pegmatite, the muscovite crystals therein being quite coarse. The width of the white clay cannot be determined, as it is covered with gravels except where exposed by sluicing. It is stated that coarse placer gold occurs in this clay to a depth of several feet. A shaft, full of water at the time of inspection, was said to be sunk a distance of 16 feet in the white clay and it was stated that coarse gold was encountered for a distance of 13 feet. A sample panned from the top of the white clay certainly showed some nice coarse gold. Further work will doubtless throw some additional light on the matter.

This is an interesting discovery and well merits following up. The nature of the country-rock suggests the possibility of mica of commercial size being found, and it would seem worth prospecting with this end in view. The owners of this lease live in their cabin on Hixon creek all the year, trapping in winter and placer-mining in summer. They have shown much industry in the way of ditching and flume construction, whipsawing all the lumber required, and are entitled to much credit.

Granite Mining Co.—The property of this company is situated at North point on the Fraser river. An occurrence of scheelite was reported as existing on this property, but inspection was impossible. Galena-showings in this region are described by L. Reinecke on page 106 of Memoir 118 of the Geological Survey.

BARKERVILLE SECTION.

Antler Creek.

Kafue Copper Development Co.'s Dredge.—Actual dredging operations were commenced on March 1st, but two unfortunate accidents, sinking of the dredge and breaking of the spud, entailed a delay of over two months. However, in the early summer rich ground, which had not previously been drifted, was met with and good results were obtained for the remainder of the season. At the time of inspection the dredge was digging a 67-foot bank, 51 feet below water-level and 16 feet above. The average height of bank has been between 55 and 57 feet.

Consolidated Mining and Smelting Co. of Canada, Ltd.—This company commenced operations in October on the H. C. Carry leases on upper Antler creek with a force of five men, R. B. Shelledy being in charge. At the time of inspection work had just been started and comprised reopening the old workings previously run in the old channel at this point.

Guyet Lease. This lease is situated on the right bank of Antler creek, about three-quarters of a mile above Pleasant Valley creek, and is owned by J. Wendle, C. M. Edwards, Commander J. H. Clegg, and Commander L. E. R. Booth. This was originally worked by a man called Guyet, who discovered evidence of a high run of gold apparently crossing Antler creek at this point in a more or less northerly and southerly direction. On the east side of Antler creek an old drift, now caved, is said to follow the old channel for 120 feet, with crosscuts run from rim to rim. While promising values were obtained, it is stated, they were not high enough for drift-mining, while offering good possibilities for hydraulic mining. Present plans therefore focus on piping the gravels at this point. Guyet originally blazed the course of the supposed line of this run, which he deemed to parallel Antler creek southerly to a point about opposite Wolf creek, when it may again cross Antler creek.

A No. 2 Monitor, with flume, penstock, and pipe-line (18 to 9 inches), has been installed and everything is in readiness for the spring run. It might be noted that on the same supposed channel, about three-quarters of a mile above the Guyet lease, Butts & Tisdale are working.

Lowhee Creek.

Hopp Mines. This, the chief hydraulic mine in the district, has not experienced a good year. Operations comprised piping to a point somewhat above the old reservoir and were hampered by necessity of handling the old dam-timbers. Much trouble was also experienced owing to excessive wear of the steel plates in the flume. These, it is to be noted, are not manganese steel, but merely high-carbon steel with a small percentage of manganese. Doubtless manganese-steel plates would have given good service. The management contemplates trying steel rails next year.

The piping season was short, from May 1st to July 28th, followed by two months of shortage and an intermittent fall run. Some 600,000 cubic yards of gravel was piped off during the year. Operations in 1927 will be awaited with interest, because the limit of drifting by the old-timers seems to have been reached, and it is hoped that virgin ground will be encountered to the summit.

Emory Gulch.

D. McIntyre and M. Schilling obtained a "lay" from John Hopp Mines on some ground here and, it is reported, did fairly well. Unfortunately a most regrettable automobile accident resulted in the untimely death of Mr. Schilling.

Williams Creek.

Hurdy. This is a real-estate claim situated on the right bank of Williams creek opposite Mink gulch. It is owned by E. W. Giddings and H. Rivers. The objective is the piping-out of the right bank of Williams creek at this point, which it is stated had formerly been tried with promising results, but the attempt was abandoned owing to insufficient water-pressure. Great energy has been displayed by the present owners, who within two months of acquiring the claim had installed a No. 2 Monitor, with 800 feet of 11-inch pipe, constructed a penstock, and cleared out about 1 mile of ditch, taking water from Williams creek. The penstock is situated so as to give a head of 145 feet at the nozzle. The channel is supposed to be about 300 feet wide and 800 feet long. Unfortunately dumping facilities are poor. The owners propose installing a drag-line hook operated by a gasolene donkey-engine for removal of boulders. Piping will be commenced in the spring.

Shepherd Creek.

Rees's Leases. R. D. Rees owns one creek and one bench lease on Shepherd creek. Present operations focus on the north side of Shepherd creek just about opposite the end of Downey Pass creek and consist of piping the gravels in this region, which is overlaid by a thickness of about 4 feet of peat. The channel here is about 150 feet wide and bed-rock slopes downwards north, thereby rendering it impossible to follow much farther north, the only present outlet for tailings being south into Shepherd creek. The owner at present is compelled to pipe only those places on the rim which are sufficiently high to afford grade for tailings-discharge. "Pay" is throughout the gravel with concentration in certain layers. Many rounded nodules, some spherical, of arsenical iron pyrites and galena are of common occurrence. Samples of the former failed to show more than a trace of gold. The

gravels are evidently of considerable depth at some points, a shaft sunk 32 feet having failed to reach bed-rock. The gold in main, while fairly coarse, is much worn.

There are indications pointing to the possible continuation of this channel to 8-Mile lake, and possibly some connection with the gravels of the Thistle pit on the south shore of the lake. If so, the yardage will be very considerable. It is clear that this region should be tested by Keystone-drilling. The owner has one scheme whereby an outlet for tailings would be afforded by running a tunnel 550 feet in length in the right bank of Shepherd creek (to avoid slide-rock) and upraising at the end in gravel. The end of the tunnel would be between 90 and 100 feet below the outlet of the present pit. While such is feasible, the wisdom of drilling this ground first is apparent. Water for this property is obtained from Shepherd creek.

Harrington's Leases.

These leases, owned by Mrs. E. W. Harrington, are three in number, two of which are situated above and one below the property of R. D. Rees. The two former are situated in the comparatively flat country at the headwaters of Shepherd and Martin creeks, which flow in opposite directions, the former north-easterly and the latter south-westerly. These leases have only recently been staked and no work has been done on them so far as could be ascertained.

Valley Creek (Big Valley Creek).

Valley creek (or Big Valley creek, as it is more commonly known) is one of the more accessible untested possible dredging areas. Fifteen dredging leases, covering a length of 8 miles of the creek between 9-Mile lake and Sugar creek, are owned by J. Wendle, Laurent Muller, and associates. A trip was made for several miles down the valley to get an idea of the salient features. Valley creek has its source in 9-Mile lake, empties into the Willow river, and occupies a valley from 500 to 1,000 feet or so in width, trending north-west and south-east some 24 miles in length. A road some 12 miles in length (the last 3 miles of which are somewhat out of repair) leads from Barkerville to the upper end of the ground covered by the leases.

The upper part of the valley is wide, over 1,000 feet in most places. Much is meadow land, with sparse growth of jack-pine timber in places. The northward-flowing tributary creeks, Coffee, Stewart, and Sugar creeks, have all been worked for placer, either by drifting or hydraulicking. It is stated that four drill-holes were put down in the valley between Coffee and Stewart creeks some twelve years ago. The first three holes, it is stated, were all less than 40 feet and presumably reached bed-rock. Values shown were about 10 cents a yard. The fourth, about the centre of the valley, was 80 feet deep and is stated to have shown values of 24 cents a cubic yard.

Some 5 miles below the source of the creek there is a canyon, below which the valley narrows to 400 or 500 feet, about which width continues to the end of the leases. Just below the canyon is *Big Valley* mine. Some thirty years ago a shaft is stated to have been sunk at this point 38 feet to rim-rock, and a crosscut was driven out towards the centre of the valley for a distance of 100 feet, when it broke through into gravel, in which it was continued for another 100 feet, striking rim-rock again, when the tunnel was directed up-stream. The pump being unable to cope with the water, further work was discontinued. The gravel taken from the tunnel is said to have averaged $2 a cubic yard.

There can be no question as to there being an immense yardage of gravels in the portion of the valley covered by the leases. There are other features also which indicate that it is well worth while drilling a few cross-sections by way of preliminary, followed by more thorough drilling if promising results are yielded. It is only by drilling that those features can be ascertained which will determine its suitability for dredging. It is commended to those interested as being worthy of investigation. It is readily accessible. A tractor Keystone drill could with very little expense on the road be got to the upper end of the valley. The flat topography thereafter should enable the drill to be got to lower points without any difficulty.

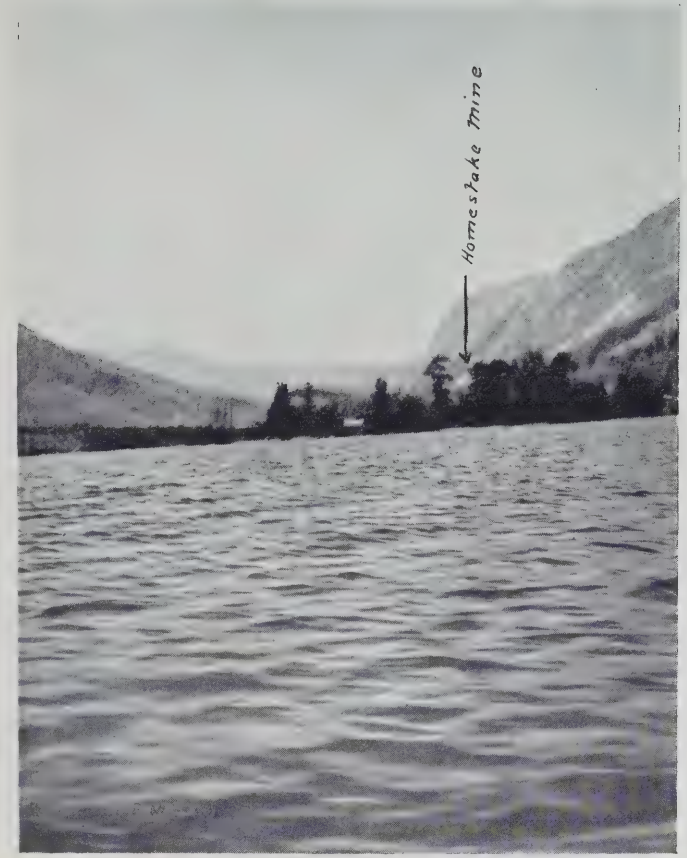
Eight-mile Lake.

Cornish & Ross worked at their hydraulic property at 8-Mile lake all the season.

Slough Creek.

Ketch.

This claim, situated at the mouth of Devil's canyon, is owned by W. Houser, Mrs. E. L. Houser, and R. McDougall. This claim is probably on the same run as the *Point* claim below on Slough creek. It is stated that promising results



Squaam Bay, Kamloops M.D.

Homestake Mine, Kamloops M.D.

were obtained during the season, indicating an extension eastwards towards Burns creek. The plant consists of a No. 2 Monitor, 600 feet of 24-inch, 11-inch, and 9-inch pipe. Water is obtained from Olally and Burns creeks, a small slough forming a reservoir. The head of water at the nozzle is 90 feet.

Two Chinese companies are operating on Slough creek below the *Ketch*, one at the *Point* claim and the other farther down.

On Coulter creek Julius Powel has been working all season.

Devil's Lake Creek.

El Dorado. This claim and two adjoining creek leases are owned by J. Rolin, Nels M. Hansen, and J. P. Friis. An interesting and successful attempt was made to drain a small lake on this property in Devil's canyon, in the bed of which it is hoped gold will be found. Previous operators have in past years attempted this, but have for various reasons failed. Previous attempts consisted in running a tunnel in rim-rock at a point about 60 feet vertically below the surface of the lake, and for a distance of some 285 feet presumably to a point vertically below a small shaft sunk to a depth of 23 feet at the edge of the lake. Attempts to hole through failed and might have been due to many reasons, which there was neither opportunity nor occasion to determine.

The present owners, wisely keeping their workings as far as possible in solid rock, after levelling, raised up in rim-rock some 20 feet back from the face of the tunnel some 22 feet, drifted a few feet only out of rock, and managed to drive a bar through into the bottom of the shaft, and finally sections of 10-inch pipe. An open-cut was then made from the lake to the bottom of the shaft on the surface, and it was hoped that the 10-inch pipe would afford sufficient vent. Owing to repeated chokings with debris the drift from the top of the raise was finally carried through to the shaft. This was the stage when the property was last inspected and there appeared to be no reason why any further difficulty should be met with. Presumably it had been established by sounding that the depth of the small lake was but little, if any, below that of the bottom of the shaft. It is stated that in drifting from the raise a carbonized tree-trunk was encountered.

Mining operations were in charge of Henning Bergquist, who carried matters out in a thoroughly capable and miner-like manner. The result of the investigation of the bed of the little lake next season will be awaited with interest.

Lightning Creek.

Cariboo Eagle Mining Co., Ltd. This company, a new venture, is a limited liability partnership, the partners being J. P. Houser (manager), J. P. Friis, Nels Hansen, and Mrs. Gertrude Murphy. The property consists of three leases on Houseman creek, more commonly known as Eagle creek, a south-flowing tributary of Lightning creek, about 4 miles above Stanley. In the sixties the surface gravels at the mouth of the creek were worked. More recently Otto Muller followed by drifting a channel diverging east of the present creek under heavy cover. Slum, it is stated, finally prevented farther advance. Present operations centre on piping off the entire bank.

Work done during 1926 comprised construction of flume, 700 feet of 16-inch and 9-inch pipe, setting-up of No. 2 Monitor, construction of a short water-flume and penstock, and clearing out of ditch. Water is taken from Eagle creek and the available head is 140 feet. About 100 feet vertically above the penstock two small lakes form a very convenient natural reservoir. Everything has been prepared in readiness for the spring run. The general layout of plant is good and reflects credit on those concerned.

Beaver Pass.

The possibilities of Beaver pass as a dredging area have long been discussed, especially as there are grounds for the belief that originally Lightning creek flowed along this valley to Willow river.

Eleven dredging leases, owned by H. J. Gardner (3), E. Falk (1), M. Sunberg (1), A. Wallinder (2), G. Carlson (2), and F. Chapman (2), extending in a north-west direction along the valley from the limits of H. J. Gardner's ranch, were taken under option by G. Carlson, of Duluth, Minn., in the fall of 1926 and Keystone-drilling operations under the management of A. Wallinder were started in October. A. F. Brown is in charge of actual drilling.

A trip was made along the valley as far as Oro Fina creek, a distance of some 9 miles from Beaver Pass House. The valley is upwards of a quarter of a mile in width and is to a large extent occupied by meadow and marshy land, with a very small amount of timber. On both sides the tributary creeks, notably Hyde and Oro Fina creeks on the west and Baldhead and Rouchon creeks on the east, were the scenes of placer activity in the early days, likewise many of the benches. The latter are even now receiving attention, E. Falk meeting with promising results on a bench on the south side of the valley just opposite Oro Fina creek.

No question can be entertained as to the huge yardage of gravel, and the area possesses the earmarks of promise, but drilling alone can disclose those data which determine whether it is suitable for dredging enterprise. At the time of inspection in October a force of eight men was employed in road-construction and in getting drill into position at Baldhead creek. Assistance in connection with the road was given by the Department of Mines. The outcome or drilling operations will be awaited with great interest.

Lightning Creek.

Caribou Mining Co.

This company, whose office is in Erie, Pennsylvania, controls four leases, including the Yeates claim and McPhail lease, lying between Lightning and Sovereign creeks, and covers the ground immediately opposite the old *Bonanza* mine on Lightning creek and extends as far east as Mosquito creek. The latter is about 1½ miles below Wingdam. The property is readily reached by branch road and trail leading off the main Quesnel–Barkerville road. The McPhail pit was formerly opened on the left bank of Lightning creek opposite the old *Bonanza* mine, and considerable piping was done here before acquisition by the present holders, who have been engaged in superficial prospecting.

This pit is commonly thought to be opened on a high run of Lightning creek. Operations were suspended here originally, it is stated, mainly because of the inadequate water-supply derived from Mosquito creek. It is stated that a tunnel was originally run in a distance of over 100 feet on the left bank of Mosquito creek in promising gravel, which is thought to represent an old channel. The portal of the tunnel was visited, but it was not possible to get in as it was badly caved. A very considerable outlay will be necessary to get water on this property; therefore the wisdom of preliminary drilling is apparent in order to determine whether such expense is justified. Drilling should be the first step. To get a drill on the ground a bridge across Lightning creek will be required, but this latter is not a very serious matter and will entail no material expense. The company apparently entertained the idea of getting an Erie steam-shovel for digging a water-ditch and using it subsequently for excavating gravel. It will be evident from the foregoing remarks that this policy is not considered advisable until testing is done by drilling.

Small-scale operations were also carried on by G. R. Shaw and H. Eden respectively on their leases above Stanley, and by J. Williams on the Ah Quick claim.

On Donovan creek, a north-flowing tributary of Lightning creek, M. Sunberg discovered a high run above the old pit at this point and is reported to have done very well during the season.

H. Jones and associates are testing a possible high run of Lightning creek on the right bank about 450 feet vertically above the creek close to Wingdam. Several shafts have been sunk in glacial drift, two of them to bed-rock. Nothing of importance had been found up to the time of inspection in October, when active prospecting was still in progress.

Lightning Creek Gold Gravels and Drainage Co., Ltd.—An excellent résumé of this company's operations from the earliest times to 1923 will be found in the Annual Report for that year. Since that time no mining of the deep gravels has been carried on. Sale of the property by public auction was ordered in Supreme Court on December 20th last by Mr. Justice W. A. Macdonald, the same to take place on June 7th, 1927.

Swift River.

Gold Dredging Syndicate, Ltd.

The manager of this syndicate, M. M. Kerr, states that the "Rowe Circulating Dredge" (refer to Annual Reports for years 1924 and 1925) was in operation for two months, but failed to function satisfactorily as a dredge. The ground owned by this syndicate consists of two creek leases on Swift river, about 5 miles above Cottonwood. The manager states that as a result of preliminary drilling it was

estimated that 5,000,000 cubic yards of an average value of 40 cents a yard were contained in this ground. It seems singularly unfortunate that with ground of this character there has been a hitch in recovery.

Fraser River Section.

Tertiary.

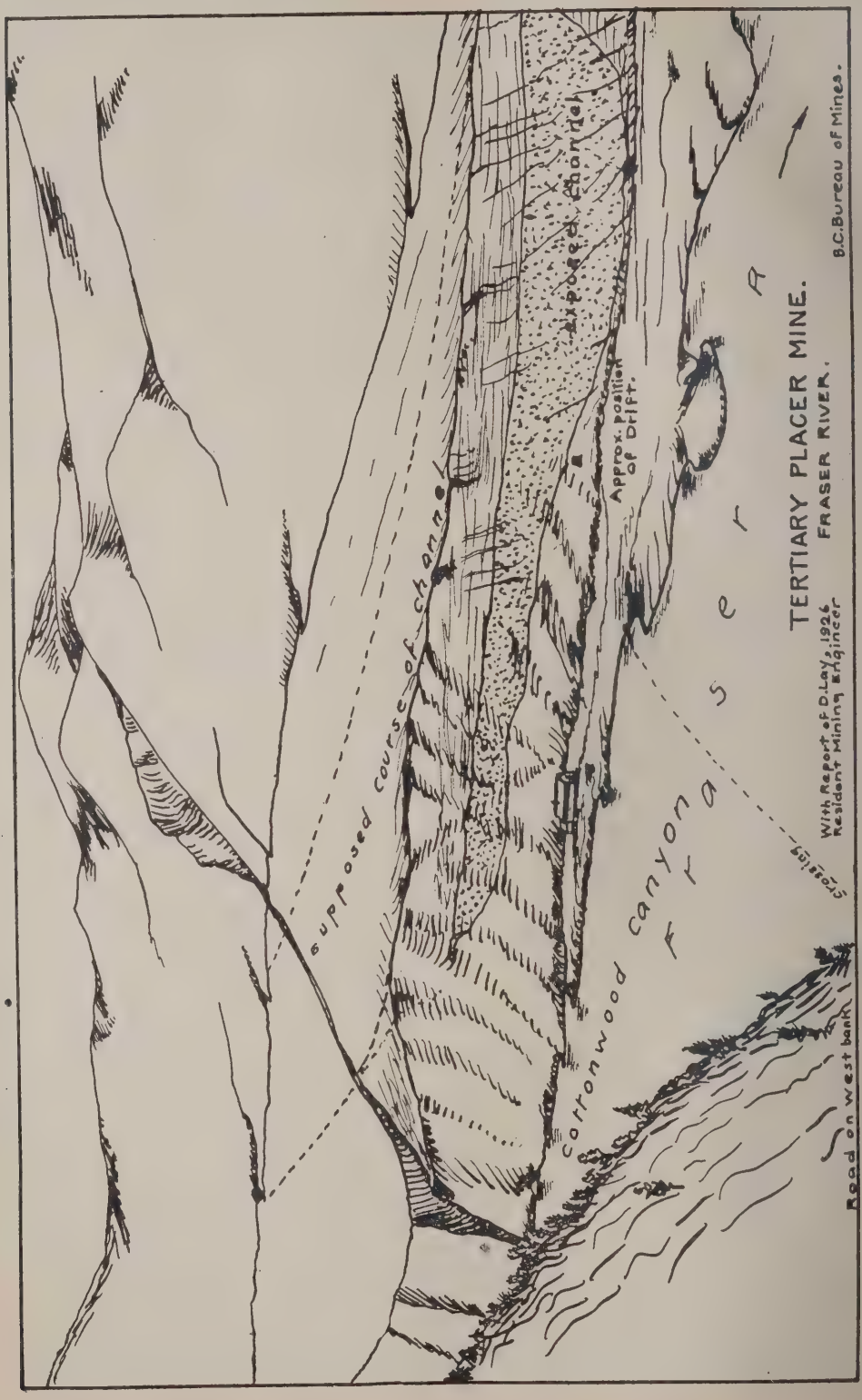
This property is now operated by a partnership headed by Donald D. Fraser. It is situated on the east side of the Fraser river in Cottonwood canyon and is distant about 16 miles by road from Quesnel. From the latter place a point on the west side of the river immediately opposite the mine can be readily reached by car and the river crossed by boat kept at the mine. At this point the Fraser river has cut obliquely through an old channel, the gravels of which are exposed on both sides of the present river. Work has been concentrated almost entirely in following the portion of the channel on the east side northwards. The length of the oblique exposure on the east side is about 1,100 feet, but the true width is probably about 900 feet. But the gutter is on the left rim, and it is in the gutter that mining has been carried on, values being too scattered on the right rim to admit of profitable extraction. The channel has to date been followed upwards a distance of 1,500 feet by adit-tunnel. For the last 400 feet the pay-streak has averaged about 12 feet in width, prior to which it was about 50 feet. There is practically a bed-rock concentration of gold, although gravels for a few feet up contain small values. The overlying cover is about 120 feet thick in the region hereto mined, but gets thicker farther ahead. The gravel is tightly cemented, almost a conglomerate, and shows an entire absence of signs of oxidation. Carbonized driftwood is of very frequent occurrence.

The gravel stands up well in mining, even without timber for some distance, provided that no surface water percolates through. There is a seam of sand and silt about 7 feet up from bed-rock, and whenever even a little surface water percolates through, trouble is manifested at once. As the value of the gravels does not exceed between $1.50 and $2 a ton when wet ground is met with, it is considered cheaper to turn the drive into solid bed-rock, and follow in this until conditions improve, rather than to go to the expense of the heavy timbering required to continue the drift. For about the last 100 feet surface waters have given some trouble and the tunnel is in bed-rock for this distance.

The gravel is mined with compressed-air machine-drills. By use of 60-per-cent. dynamite it was ascertained that the gravels are disintegrated sufficiently to free the gold, which is recovered by sluicing in the ordinary way. The sluicing-flume is installed at the portal of the tunnel and a small boiler for the operation of a steam-driven air-compressor. Originally the company operating this property installed a crushing and milling plant, but the necessity for this was entirely eliminated by the simple expedient of using 60-per-cent. dynamite as above described, and the plant has been discarded long since.

The cost of driving in the gravel is given by D. D. Fraser as $34.50 for 5 feet of advance, which yields about 25 tons of gravel; that is to say, the cost for a ton of gravel yielded is about $1.25; as the minimum yield of gold is $1.50 a ton no wide margin is left for any contingencies such as bad ground.

Very careful records are kept by D. D. Fraser, and he finds that whenever the grade of the bed-rock deepens, the pay-streak gets narrower and poorer, widening and improving when the grade flattens. The grade varies from 1.1 to about 7 per cent., the rise being of course in a northerly direction. He states that about 3,000 feet ahead of the present workings there is an outcrop of comparatively soft diorite porphyry, in which a flat gradient may be expected and therefore better values and a wider pay-streak. Further, the nature of the gold being coarse (some pieces have adhering particles of quartz), a fairly local source is therefore indicated. There is known to be a gold-bearing region on Hixon creek, which lies about 18 miles north, and it is argued that prospects should be more hopeful as these are approached. These arguments are doubtless not without sound reason, and there is a certain promising speculative feature connected with running the tunnel ahead. But some tangible proof of conditions in the channel ahead is obviously required before any capital outlay connected with improving existing plant is justified. It is stated by D. D. Fraser that some 3 miles ahead of the present workings a small tributary creek flows into the Fraser river from the east, exposing this ancient channel. It would appear that some investigation of the channel at this point would be useful and also some Keystone-drilling. D. D. Fraser is to be congratulated upon the careful records he has kept and


TERTIARY PLACER MINE.
FRASER RIVER.
With Report of D. Lay, 1926
Resident Mining Engineer
B.C. Bureau of Mines.
Supposed course of channel
Approx. position of drift.
Cottonwood canyon
Fraser
Road on west bank

the maps he has prepared (one of which is reproduced in this report), all of which very greatly tend to economize the time of an examining engineer, by whom they will be heartily appreciated.

Keystone-drilling.

Keystone-drilling to determine dredging possibilities was carried on by different operators at several points. Besides that undertaken in Beaver pass, mention of which has already been made, a large number of holes were drilled by the Kafue Copper Development Company in Cunningham pass and some on Antler creek. A. F. Brown drilled four holes, total footage being 229 feet, on his creek leases in Cunningham pass. G. A. Dunlop and associates drilled eighteen holes on Pine and Summit creeks. The results of the foregoing are not known.

Lode-mining.

Island Mountain.

C. J. Seymour Baker, who owns the property formerly held by the Island Mountain Mining Company, has been engaged in a survey of the claims and general prospecting and employed a force of three or four men for some weeks. He has also been busy investigating the question of treatment of ores and black sands.

Proserpine Mountain.

An account of properties on this mountain will be found in the Annual Reports for the years 1918, 1922, and 1925. Attention is drawn to the fact that the late Dr. Uglow made a particular study of the Barkerville vein system. Excerpts from his report, which make mention of promising surface showings on this mountain, will be found in the Annual Report for 1922. It is pointed out, further, that no work on these showings has been carried out on the lines which Dr. Uglow unmistakably indicates are most likely to meet with success.

Cow Mountain.

Rainbow. A full account of this property will be found in the Annual Reports for 1924 and 1925. This year the owner, A. W. Sanders, has been engaged in further prospecting and panning gold from the small rich veins on this property. He has uncovered additional showings in the region immediately adjoining the present workings.

Cunningham Creek.

Homestake. A full account of this group will be found in the Annual Report for 1925. The owners, J. H. Campbell and J. P. Delhanty, state that they have exposed by open-cutting some more galena, which appears to be a parallel seam to that discovered last year.

Black Jack Gulch.

Leviathan. This claim is one of six record and two real-estate claims which comprise the *Black Jack* group, owned by F. J. Tregillus and T. Blair. A large quartz vein was uncovered on the *Leviathan* claim this year by the owners in Black Jack gulch, about 400 yards up the gulch from the Barkerville–Richfield road. On the right bank of the gulch a vein is exposed 48 feet in width striking N. 50° W. (mag.), with a slight dip to the north-east, which follows the bedding of the enclosing schist country-rock. On the foot-wall is a width of 8 feet of quartz and on the hanging-wall a width of 4 feet. Within the vein a number of seams of quartz cross diagonally from wall to wall. The rest of the filling is schist. Samples were taken of the cross-seams of quartz and also of the quartz on the walls, but no values were shown beyond traces of gold and silver. A sample taken of selected portions of the most decomposed schist within the vein assayed: Gold, 0.14 oz.; silver, 0.08 oz. to the ton. It is possible that this vein is a continuation of the British Columbia Mining and Milling Company's vein, and that the *Steadman* vein on Williams creek is again the continuation of the *Leviathan* vein. As Dr. Uglow points out, in the case of the interbedded veins, the most hopeful place for ore is at the points of junction with the north- and south-striking veins.

Westport. This is another claim belonging to the *Black Jack* group. In Black Jack canyon, alongside the wagon-road, is exposed a well-mineralized vein of quartz. A sample taken across a width of 2 feet, this being the best-looking portion, was found to assay: Gold, 1.9 oz.; silver, 0.5 oz. to the ton. Such a showing in such an accessible

place appears to be well worth following up. In the Annual Report for 1922 will be found an account of the *Black Jack* property by Dr. Uglow.

QUESNEL MINING DIVISION.

The placer production of the Quesnel Mining Division for the year was $121,535, as compared with $50,911 in 1925; a marked increase, due to the success gained by the Cedar Creek Mining Company, operated under contract by B. Boe.

Considerable interest was manifested in galena-mining possibilities on Black Bear creek, notably by P. Harrington and associates.

V. L. Eardley Wilmot, of the Dominion Department of Mines, was engaged in further examination of the deposits of diatomaceous earth in the vicinity of Quesnel.

A start was made in the non-metallic minerals with the shipment of 120 tons of silicate of alumina by B. A. Cunliffe from a deposit recently opened up near Williams Lake.

Quesnel Section.

Construction of the new bridge over the Quesnel river at Quesnel this year afforded illustrations of the natural resources of the Province. Excavations in the south bank of the river for the concrete abutment disclosed an extensive deposit of lignite, although not of commercial grade. Where exposed at this point the deposit consists of layers of lignite and clay, the total thickness being in the neighbourhood of 45 feet. A drill-hole was put down in the bed of the river by the Department of Public Works, which disclosed continuation of lignite with clay-seams to a depth of about 70 feet and making the total thickness of the deposit 118 feet.

Another interesting feature of the bridge-construction was the recovery of the gold from the coarse and fine aggregate prior to concrete-making. To John McDougall, an old placer-miner (about whom, incidentally, appears an interesting article in *Engineering and Mining Journal* of September 6th, 1919), credit is due for seizing a golden opportunity. Abundant material for coarse and fine aggregate for concrete was available at the bridge-site in the form of the river-gravels. For the washing and sizing of these a small plant was erected on the banks of the river, and J. McDougall at once perceived that by placing some riffles in the launder conveying the wash-water and fine aggregate some gold would be secured without additional cost. He accordingly asked permission to do so, which was granted, and he had the satisfaction of cleaning up, as he stated, between $2 and $3 a day, without much labour. A considerable quantity of black sand (possibly platiniferous) was recovered with the gold.

Cariboo Gold Platinum Extracting Co., Ltd.—For particulars of this company refer to Annual Report for 1925. The president, S. J. Marsh, informed the Resident Engineer that owing to inability to secure funds this company had been compelled to dissolve.

Likely Section.

Cedar Creek.

Cedar Creek Mining Co., Ltd.

This property is operated on a royalty basis under contract by B. Boe. Work was carried on last winter on the *Sheridan* lease in the underground workings, where an area about 200 feet long by 100 feet wide was drifted. In March of this year "pump hydraulic" operations were resumed immediately adjacent to the "Nugget Patch" on the lower side—that is, the west side. Very shortly thereafter, phenomenally rich "pay" was encountered and in nine months, it is stated, 4,700 oz. of gold was recovered. The total thickness of overlying material on bed-rock (amygdaloidal andesite) at this point is not over 20 feet, of which all but about 2 or 3 feet immediately over bed-rock is glacial. Gold occurs in the 2 or 3 feet immediately above bed-rock and in the cracks and crevices of the latter to a depth of 1½ to 2 feet. The gold is all coarse and nuggety. One nugget weighing 17 oz. was recovered. At the time of inspection, while the limits of the "pump hydraulic" set-up had been reached and most of the bed-rock cleaned, nevertheless, picking in the bed-rock and panning of gravels standing in the bank disclosed the richness of the ground. It is of interest to record the fact that last summer three pans were taken from this patch, yielding respectively 49, 35, and 28 oz. gold. H. Jones, of Wingdam, a survivor of the old-timers of the sixties, and himself one of the original partners in the famous *Van Winkle* claim on Lightning creek, stated that, even in the palmy days of the Cariboo, pans yielding about $1,000

in gold were about the richest on record. It is of interest also to record the fact that a prospect-pit sunk by a previous operator within 5 feet to the south of the very rich ground struck last summer, and down to bed-rock, failed to find any encouraging gold values. The rich ground will of course be followed with "pump hydraulic." The gravel is tight and dynamite is used occasionally. The company is also erecting a new impounding-dam for water-storage, 160 feet long by 20 feet high. The company employs a force of about twenty-four men.

Platt & Lyne Leases. These leases immediately adjoin the property of the Cedar Creek Mining Company on the north-east. They are now controlled by E. T. Fitzsimmons, who has been operating them, employing from two to five men, for the past three seasons. This year several pits were sunk on the Platt lease and one on the Lyne lease. Sinking was also attempted in the "Big Channel" on the Platt lease, but owing to water had to be abandoned. Some prospecting was also carried out on the Fitzsimmons lease, which adjoins the Platt lease on the north-east and extends on both sides of Cedar creek. It is understood that nothing of importance was disclosed as a result of operations in 1926.

Cedar Creek Delta.

At the time of inspection in October a drill had been hauled on to the ground and it was understood that A. M. Whiteside was to commence drilling the delta as soon as a drill crew could be procured. D. L. McElroy and J. Thom were employed prospecting.

Spanish Mountain.

J. Lyne worked all season on his lease. It is understood that further work was also done on the Oliver & McDiarmid lease immediately adjoining. Time did not permit of inspection.

North Fork of Quesnel River.

It is very necessary to bear in mind that in the case of many of the deposits which exist in the form of banks hundreds of feet in height on the Quesnel river the great mass of material may be merely glacial debris, in which no commercial gold values are to be expected. In such cases there is usually a top layer of gravel a few feet only in thickness, which represents the resorted and enriched gravel formed as the river cut down through the mass, and this may be the only profitable portion of the entire deposit. There may be several benches more or less immediately below one another at intervals, or they may occur tandem fashion. "Pay" will be confined probably to a thickness of a few feet in each bench. Shallow surface prospecting in such cases merely indicates a *superficial* occurrence. In certain exceptional cases there may be grounds for inferring that a tributary creek represents the source of local enrichment, but that is not the rule. The wisdom of adequate examination and prospecting, or testing to sufficient depth, before capital expenditure is made on a water system must be apparent.

Quesnel Gold Mining Co. An account of previous operations will be found in the Annual Reports for 1924 and 1925. At the point at which the monitor was set up last year bed-rock was found to be close to the surface and the gravels therefore very thin, although it is stated they carried satisfactory values. Accordingly the company is prospecting the lower portion of its leases, running a bed-rock tunnel in the right bank of the river close to the old *Victoria* pit. A tunnel was also run about 110 feet into the bank at a point about 1,000 feet up-stream from the *Victoria* pit. No values were disclosed.

Matthias Gold Mining Co. For previous account refer to 1925 Annual Report. This company was unfortunate enough to lose its cook-house by fire and to further augment trouble a reservoir-dam burst, owing, it is said, to the work of beavers. The pit opened appears to show a superficial bench containing "pay" values a few feet in thickness overlying glacial debris. The company has been engaged for the latter portion of the season in prospecting about half a mile below the present pit, where a number of surface pits have been sunk over quite a large area and which, it is stated, show in the great majority of cases good values.

Small-scale Operators.—Among these may be mentioned: W. Farrell, on the south bank just below Spanish creek; W. Westenhiser and A. Pearson, on lease adjoining Matthias Gold Mining Company; F. Bendtsen, on the south side of the river just above the old North Fork bridge, whose lease has been examined by E. C. Annis, consulting engineer; by W. J. Hill and J. Shaw, on their respective leases just above Quesnel Forks.

Altamen Mines, Ltd.—This is an Edmonton company which has been carrying on some prospecting under the supervision of E. C. Annis at 2-Mile flat, 2 miles below Quesnel Forks. Time did not permit of inspecting this, but it is said nothing of importance resulted.

South Fork of Quesnel River.

McGregor-Girdwood Leases. These are two adjoining bench leases on Big Wheel flat, 3 miles from Likely by wagon-road, owned by A. E. McGregor, J. B. Girdwood, M. Turpin, and H. Thurborn. The depth of gravel where exposed on the river-bank is about 50 feet, bed-rock being also exposed just at the river-level. Immediately on bed-rock is a thickness of from 2 to 6 feet of blue gravel containing much pyrites, which is said to average about $1.50 a cubic yard. This is overlain by a stratum of clay and silt and on top is a thickness of upwards of 45 feet of coarse gravel. The whole bank is said to average about 35 cents a cubic yard. For testing purposes, A. E. McGregor devised and set up at the river-level an ingenious small pump hydraulic. An old Cadillac car-engine runs a 4-inch centrifugal pump, which delivers water to a monitor through a 4½-inch canvas hose. The monitor is made up of 4-inch pipe and reducer coupling 4 to 2 inches. The following details of performance are given by A. E. McGregor: The engine at 940 r.p.m. consumes ⅘ gallon gasolene an hour and 1 gallon of cylinder-oil in twenty-four hours. The pump delivers 60 cubic feet of water a minute, moving 40 yards of gravel in eight hours with three men employed.

Nelson-Furler Lease. This lease adjoins the McGregor-Girdwood leases on the down-stream side, where bed-rock outcrops at higher points above the river. A tunnel about 9 feet long has been run in just above rim-rock, about 40 feet above the river. It is said that values shown were between 55 and 60 cents a yard. Some considerable distance back from the river-bank the owners are at present sinking a shaft, which is now down 40 feet.

The bench on which the foregoing leases are situated is known as Big Wheel flat and was the scene of much activity in the early days and was very rich. A pertinent paragraph appears in the Annual Report for 1902 by W. Fleet Robertson, then Provincial Mineralogist:—

"In the earlier days very large amounts of gold were obtained from the bars in this part of the river, among which the most famous were the Dancing Bill gulch bar, French bar, and Big Wheel flat. The character of the river would indicate that these bars were not formed by, nor was the gold derived from, the gravels washed down the channel of the main stream, but that they owe their origin to gravels carried down by the creeks from higher levels on the hill-sides and concentrated to a certain extent; in short, they are derived from the sides of the river and not directly from up-stream."

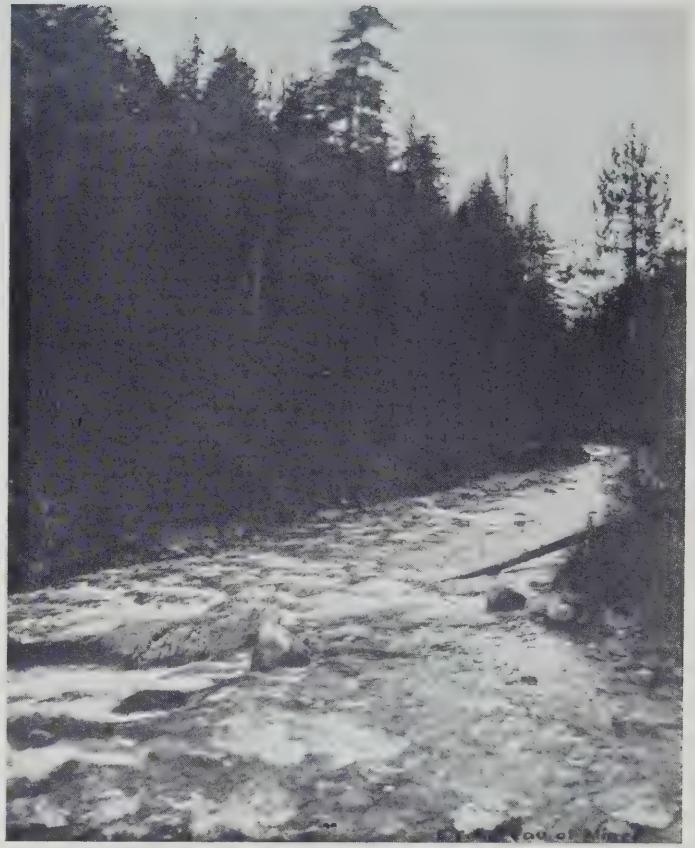
There appear to be sound grounds for Keystone-drilling the area covered by the foregoing leases, with a view to determine yardage and average values.

Rose Gulch. T. W. S. Taylor and J. S. Macdonald have two bench leases at this point. In this region, about 150 feet above the present river-level, are two benches one above the other, which were both extensively worked by ground-sluicing in the early days. Present owners have installed a small hydraulic plant, taking water from Rose lake, and giving a head of 70 feet. They are now working at the lowest part of the lower bench, and there appear to be prospects of an extension for perhaps 700 or 1,000 feet. Bed-rock consists of sharply dipping conglomerates, slates, and sandstone. The gravel is shallow, some 8 or 9 feet of "chicken-feed" overlying the "pay" of perhaps 18 inches which lies immediately upon bed-rock.

Bullion. An option on this famous property was secured during the year by Ross, Holland & Ulch. The pit was cleaned out with a view to completing the upraise from the tunnel previously run under the centre of the pit from the river. The water from Bootjack lake was diverted into Morehead lake and repairs were made to the water system at various points. The operators are naturally subjected to the very severe handicap occasioned by the state of repair into which this huge plant has fallen owing to disuse for a long period. Plans also embrace running a tunnel from Jawbone creek to tap Morehead dam-water, which would eliminate a long portion of flume.

Among other small-scale operators may be mentioned: C. Lackie, on his leases on Quesnel lake (*see* 1925 Annual Report), and Fred. Tasse, on his lease on Grain creek, 35 miles up Quesnel lake from Likely.

Mount Ida, Salmon Arm, Kamloops M.D.



Seymour Creek, Kamloops M.D.

KEITHLEY SECTION.

Kitchener.

This property is described in the Annual Reports for the years 1921, 1922, 1923, 1924, and 1925. Operations during the year were conducted under the management of K. C. Laylander, and comprised opening up a new pit, about half a mile above the former pit, also Keystone-drilling of areas delineated previously by magnetometric survey. The drilling of thirty-two holes proved, it is stated, the correctness of the magnetometric indications. Hydraulicking was impeded by shortage of water since July, but the total yardage piped off was in the neighbourhood of 645,000 cubic yards.

Small-scale Operators.—Among these may be mentioned: W. Bleuveldt, on Duck creek, just below the south end of Cariboo lake, and J. Hodgson, at the mouth of Harvey creek on Swamp river.

LODE-MINING.

Black Bear Creek.

Considerable interest was manifested during the year in the lead content of the quartz veins of Black Bear creek and the more immediate vicinity. Characteristic of many of the veins of the Cariboo and Quesnel Mining Divisions is the occurrence of galena with the other sulphides, and frequently the galena occurs in small lenses or "bunches," so that quantities varying from a few hundred pounds to a few tons can be selected by hand without much difficulty so as to give a product high in lead content.

From one such lens from a vein on the *Black Bear No. 1* and adjoining claims P. Harrington and associates sorted out during the summer between 10 and 15 tons of nice clean lead ore. This is the largest lens of galena which has so far been found, but from an examination of this property and neighbouring claims there would appear to be no grounds for anticipating bodies of such size as to enable the veins to be worked for their galena content *alone*. Were transportation close at hand, it is quite likely that the prospector-owner would be able to mine and ship such lenses at a profit, because the silver content of the Black Bear Creek galena seems to be distinctly higher than galena found in the Barkerville area, for example. On Black Bear creek the galena seems to carry about 2 oz. silver to the unit of lead. An ore assaying 50 per cent. lead and 100 oz. to the ton would yield at present prices (London lead, 6 cents a pound; silver (New York), 55 cents an ounce) a gross smelter value of $95 a ton. Allowing a treatment rate of $8 a ton, such ore would net at the smelter $87 a ton. The nearest railway point is Williams Lake, on the Pacific Great Eastern. Assuming a railway freight rate of $8 a ton from Williams Lake to Trail, the value at Williams Lake would be $79 a ton. Likely is distant 65 miles from Williams Lake and the present motor-truck rate between the two places is $40 a ton. Black Bear creek is distant by indifferent road and trail about 9 miles from Likely and ore has to be packed out for nearly half this distance. It is said that the present cost of packing and trucking from Black Bear creek to Williams Lake is $45 a ton, which would give a net value of $34 a ton to this grade of ore at the mine. Assuming that a wagon-road was built through up Black Bear creek, giving road transportation of 75 miles through to Williams Lake, motor-trucking costs even for large quantities of ore would not be less than 40 cents a ton-mile, or a total of $30 a ton.

The quartz veins of this creek are certainly of impressive size, but there is yet to be afforded any exposure showing appreciable gold values, apart from such as are contained in galena and iron pyrites, which represent a very small proportion of the whole vein. Of course very little development has as yet been done. There are many quartz-showings, but none has been followed up for any distance. In most cases the exposures are inadequate to determine whether the vein is interbedded or cuts across the enclosing country, except in the case of the *Black Bear No. 1* and adjoining claims, where the vein seems to be interbedded. In this case a crosscut had been run from wall to wall, so that it was easy to sample, but no values in precious metals beyond mere traces were found except in the galena.

So far there is not disclosed any evidence of the cross-veins, which are a feature of the Barkerville vein system, but no steps have as yet been taken to look for them. The quartz vein exposed at Black Bear Creek falls on the *Dial* claim is at least 50 feet wide and is evidently not fully exposed, but mineralization is very sparse and only a little galena shows. The vein on the *Black Bear No. 1* is at the point of crosscutting 43 feet in width. An account of the prospects visited follows:—

Black Bear No. 1 to No. 4. These four claims are owned by J. C. Holsclaw and are under lease for a term of fifty years to P. Harrington, John Harrington, and Richard Gladney. They are situated about 2 miles up the creek from the mouth and are distant by road and trail about 10 miles from Likely. At an elevation of 3,300 feet on the right bank of Black Bear creek there is exposed a wide quartz vein interbedded in the enclosing sericite-schist country, striking N. 80° W. (mag.) and dipping at about 45° to the south-west. At this point the vein more or less parallels the creek and the hanging-wall is within a few feet of the surface. It is exposed by open-cut for a distance of 34 feet along the strike and a crosscut has been run a distance of 43 feet, exposing the apparent foot-wall. Nice clean galena was found immediately on the hanging-wall, but had been all mined at the time of inspection. A short winze had been sunk to a depth of 6 feet at the eastern end of the open-cut and showed small bunches of galena. From this open-cut 10 to 15 tons of ore was extracted, which was being sacked. A grab sample of the best ore assayed as follows: Gold, 0.06 oz.; silver, 144 oz. to the ton; lead, 76 per cent. A sample taken in the crosscut of the most promising portion of the vein, representing a width of 21 feet, assayed: Gold, trace; silver, 0.4 oz. to the ton; lead, *nil*. The vein in the crosscut shows bands of quartz and schist and some iron pyrites. Another crosscut about 25 feet vertically below the above workings has been run a distance of 35 feet, of which the last 25 feet shows banded quartz and schist and a very little galena. This crosscut is somewhat west of the open-cut above.

Dial, Dial No. 1, and Highland Mary. These claims are owned by C. Burns, P. Burns, C. Macdonald, and W. Isbester and are situated about half a mile below the *Black Bear No. 1* and adjoining claims described above. At the falls in the creek there is exposed a quartz vein at least 50 feet in width, with the walls not fully exposed. The creek runs over the vein. The country-rock is silicified quartz-schist. The strike is N. 65° E. (mag.) and the dip almost vertical. It is sparsely mineralized, but shows in places a little galena. A sample of picked galena assayed: Gold, 0.02 oz.; silver, 43 oz. to the ton; lead, 40 per cent.

Silver King, Silver Queen, and Star. These claims are owned by M. Donohue, J. W. Johnson, and F. Kaiser, and are situated at an elevation of 4,750 feet on the right bank of Black Bear creek. There are only two or three exposures and it is difficult to determine whether the vein is interbedded. The strike seems to be N. 85° E. (mag.). The country-rock is a graphitic, thinly-bedded shale; the bedding lies very nearly horizontal. Where exposed the vein is fairly well mineralized with galena and iron pyrites. A sample of the picked galena assayed: Gold, 0.20 oz.; silver, 104 oz. to the ton; lead, 50 per cent. A sample of mixed galena, iron pyrites, and decomposed quartz assayed: Gold, 0.02 oz.; silver, 11 oz. to the ton; lead, 6 per cent.

Among others working on Black Bear creek whose properties, both quartz and placer, it was quite impossible to visit may be mentioned: P. Burns, on the *Likely;* R. Nelson, on the *Bonnie Doone;* C. Burns, on the *Mars;* and the properties of R. Owens, D. Dobson, A. Morrison, F. Hemmington, and G. R. Bagshaw.

Silver King and Silver Queen. These two claims, owned by A. Sutherland and G. Matthews, are situated on the right bank of the river, about 3 miles below Spanish creek. About 150 feet above the river in the steep banks there are exposed in the thinly-bedded shale country-rock some interbedded quartz veins, showing in one or two places some galena and iron pyrites. Very little work has been done as yet. A sample of picked galena assayed: Gold, 0.02 oz.; silver 29 oz. to the ton; lead, 40 per cent.

Keithley Section.

Peacock. This claim is owned by W. Bleuveldt and is situated on Duck creek, close to the main Likely–Keithley road and about 2½ miles from Keithley. At an elevation of 3,100 feet there are exposed in silicified quartz-schist country-rock on the banks of Duck creek several quartz veins not exceeding 2 or 3 feet in width slightly mineralized with galena, zinc-blende, and iron pyrites. These strike N. 10° E. (mag.), dipping east at a steep angle. A sample of picked pieces of galena, zinc-blende, and iron pyrites assayed: Gold, 0.02 oz.; silver, 24 oz. to the ton; lead, 42 per cent.; zinc, 6 per cent. A noteworthy feature of this property is a prominent outcrop of what appears to be a silicified green mica-schist, which

Dr. E. Poitevin, of the Geological Survey, has identified as being mariposite, a silicate of aluminium, potassium, and magnesia and water.

Non-metallic Minerals.

Silicate of Alumina Deposit on Borland Mountain.

This property is owned by G. H. Turner and B. A. Cunliffe and is situated on Borland mountain, on the Chilcotin road, about 4 miles distant from Williams Lake, on the Pacific Great Eastern Railway. A shipment of 120 tons was made this year to the British Columbia Refractories, Limited, of Vancouver, for use in the manufacture of high-temperature cement. The deposit is exposed immediately alongside the road by a cut and short tunnel in the bank, the latter being about 10 feet in height; about 100 yards higher up the road is a larger cut made by the Department of Public Works for the purpose of getting an underlying cream-coloured, iron-stained shale for road ballast. The deposit is bedded. Unfortunately the owners were away at the time of inspection and the tunnel was barricaded.

The exposure immediately alongside the road is quite small and quite inadequate to form an idea of the extent of the deposit. The upper portion of the deposit is grey in colour, of sandy, pulverulent texture; this is underlain by a more compact type, merging into a grey-coloured shale.

Chemical analysis of the former gave the following results: Silica, 69.6 per cent.; alumina, 26.9 per cent.; ferric oxide, trace; magnesia, 0.4 per cent.; and of the latter: Silica, 76.2 per cent.; alumina, 14 per cent.; ferric oxide, 1 per cent.; magnesia, 2.2 per cent.

No tests as to refractory qualities have been made as yet by this Department, but the analysis indicates that the percentage of fluxing impurities is low and refractory qualities should therefore be good. The analysis of a sample, taken by the owners of the particular portion of the deposit they are using, by G. S. Eldridge & Co. gave the following results: Silica, 71.8 per cent.; alumina, 18.82 per cent.; ferric oxide, 0.86 per cent.; lime, 0.18 per cent.; magnesia, 0.16 per cent. It is understood that the owners have had samples of this material tested by the University of Washington.

CENTRAL MINERAL SURVEY DISTRICT (No. 3).

By H. G. Nichols, Resident Mining Engineer.

INTRODUCTORY.

General.

The Central Mineral Survey District (No. 3) includes the seven Mining Divisions of Kamloops, Clinton, Lillooet, Ashcroft, Yale, Nicola, and Vernon.

The district covers an area of approximately 44,000 square miles, or, roughly, one-third of the territory of the mainland of southern British Columbia lying between the 53rd and 49th parallels of north latitude.

The headquarters of the district are located at Kamloops, a growing city of 5,500 inhabitants, situated at the junction of the North and South Thompson rivers. Other towns, with a population of over 300, serving as centres of supply within the district are Vernon, Merritt, Hope, Lillooet, Lytton, Ashcroft, Clinton, Salmon Arm, Armstrong, and Enderby.

The district is served by six lines of railways, including main lines and branches, as follows: Canadian Pacific Railway from Hope to Three Valley, 276 miles; Canadian National Railway from Hope to Canoe River, 360 miles; Kettle Valley Railway from Hope and Spences Bridge to Brookmere, 124 miles; Canadian National Railway branch, Kamloops to Kelowna, 116 miles; Canadian Pacific Railway, Sicamous to Okanagan Landing, 51 miles; Pacific Great Eastern Railway, Alta Lake to Williams Lake, 237 miles.

This is a total of 1,164 miles of railway within the district. There is also a total distance of about 300 miles of navigable lake waterways. Government roads within the district total 4,126 miles and there is a large and steadily increasing number of roads and trails to serve the especial needs of the mining industry.

Twenty grants for the assistance of prospectors in this direction were made by the Department of Mines during the year.

Geology.

The following remarks upon the general geology of the country in which the Central District is situated are made with a view to a fuller understanding of the grounds upon which its claims are based, to be regarded as a mineral area. Broadly speaking, the entire area covered by the district is mineral-bearing country; it lies within the mineralized belt of the Western Cordillera, of which the Rocky Mountain and the Coast ranges are the physiographical boundaries on the east and on the west.

From a geological view-point this north-west, south-east geosyncline, with which the Province of British Columbia is identified to a large extent, may be subdivided into two main belts on either side of a shore-line of ancient rocks (Shuswap terrain) that form the eastern boundary of the seas under which the succeeding formations were laid down; and this shore-line lies at a distance of about 100 miles to the west of the Rocky mountains. Between this line and the Pacific ocean is the belt known as the western geosyncline, a belt which includes the whole distance between Oregon and Alaska and possesses characteristic features that entitle it to be considered as a unit. It contains great thicknesses of sedimentary and volcanic rocks that have been subjected to a series of earth-movements, with thrusts mainly directed from the west; and to intimately related intrusions of batholithic rocks, which are the prime agencies of metallic mineralization in British Columbia.

It may be conceived that these latter formations acted to some extent as a buffer between the thrusts and intrusions that built up the Coast Range batholith on the west and the shield of ancient rocks on the east. They are, for the greater part, folded, sheared, and mashed, and erosion has only occasionally exposed the batholithic rocks by which they are intruded.

The Central Mineral Survey District comprises a portion of the Coast Range member of the Western Cordillera; a section of the ancient rocks on the east; and about one-half of its total area is occupied by the intruded zone of rocks last mentioned. These in turn are covered in part by later flows of Tertiary lavas.

In so far, therefore, as ultimate possibilities for the discovery of metallic minerals are concerned, the district forms an integral part of the mineralized belt in which the great deposits of copper, lead, zinc, gold, and silver have been found elsewhere in the Province, and it offers every inducement to the pursuit of prospecting and development.

Kamloops, B.C., at Confluence of North and South Thompson Rivers.

Mineralization is widespread throughout the Central District. Metallic minerals, which include those of copper, lead, zinc, gold, silver, iron, antimony, arsenic, nickel, molybdenum, and mercury, occur under a variety of conditions, dependent, to a large extent, upon the relationship of the deep-seated intrusions to the present surface; and, in addition, there are important deposits of non-metallics, including gypsum, soda, fullers' earth, diatomaceous earth, epsomite, magnesite, and clay, related to the plateau conditions that are represented over wide areas; and of coal.

Prospecting.

The renewal of activity that was noted in 1925 has been maintained during 1926; new recruits have been added to the large number of prospectors working in the district and much useful work has been done. This work, which included investigations of new areas, has been fairly well distributed over the whole of the district, and it was not possible to visit many of the prospects from which encouraging reports have been received. The value of the work which the prospectors are doing cannot be overestimated, and the present opportunity is taken to give assurance of the intention to further every legitimate interest to the fullest extent within the powers of the Department. Many gratifying evidences of the desire for co-operation have been met with and are appreciated.

Although it may be admitted that, in general, the work of exploration and prospecting within the greater part of the Central District, and more especially within the section of Interior Plateau country, is not subject to some of the disadvantages attaching to more mountainous and inaccessible portions of the Province, there are certain handicaps to the prosecution of such work, which are, it is believed, responsible for the fact that the development of the southern interior of the Province has not been more rapid. These handicaps are in relation to the conditions of mineralization noted under the heading of "Geology," which point to the necessity for search at deeper horizons in those sections, constituting an important part of the whole district, where the mineralizing intrusives are not exposed at the surface. In a large number of cases all that the prospector working over the surface can do is to get indications, and no depth to which he can carry his work is calculated to improve his prospect to any appreciable extent. Under these circumstances, it must be felt that, should some method of subsoil prospecting, electrical or otherwise, be suitable to the detection of underlying ore-bodies of the character indicated, there are outstanding opportunities for its utilization within the area of the Central District.

The keen interest that is being taken in the mineral possibilities of the district was reflected by the large number of investigations that were made by examining engineers representing established operating companies, such as the Britannia Mining and Smelting Company, Limited; the Porcupine Goldfields and Finance Corporation, Limited; the Victoria Syndicate, Limited; and others.

Mention may be made here of the number of placer-workings in the district. These are mostly small-scale operations and their importance is not to be gauged altogether by the yield of placer gold. The man with the gold-pan is the best missionary that the mining industry possesses, and his work in attempting to trace the gold to its source and in calling attention to its wide distribution is bound to exercise, as it has done in the past, a stimulating effect upon prospecting.

A comparison of the statistics of the years 1925–26 is as follows:—

Divisions.	Claims recorded.		Certificates of Work.	
	1925.	1926.	1925.	1926.
Kamloops	175	191	265	272
Clinton	139	169	102	97
Lillooet	90	87	188	192
Ashcroft	181	112	65	50
Yale	158	144	171	189
Nicola	63	66	71	108
Vernon	123	100	52	138
Totals	929	869	914	1,046

Development.

The particular features that were noted in the 1925 report in connection with developments have acquired greater prominence as a result of the operations carried on in 1926, and other promising areas are to be added to the list.

There has been marked progress in the Bridge River, Pemberton, Adams Lake, and Seymour Arm areas, and some attractive prospects have been outlined elsewhere by recent work, particularly in the Kamloops, Yale, and Vernon Mining Divisions.

In the Bridge River gold camp the *Pioneer* has reached the standing of a mine; it is developed to a depth of 600 feet and has an ore reserve valued at a gross amount of approximately half a million dollars. Values have been found to improve with depth and the present outlook is sufficiently assured to warrant new equipment on an enlarged scale. It is hoped that the encouragement afforded by the successful results of operations at this mine may influence the development of adjoining properties along lines of a broader policy than has yet been put into effect. The camp is one that calls for the utilization of natural facilities in the best interests of the whole, and a policy of vigorous development of the entire system of these gold-quartz veins is justified. The camp is deserving of investment on a bigger scale than has been represented by the limited operations that have been conducted up to the present time, and affords promise of making good return on the capital that would be involved in its development. Diamond-drilling has been commenced on the *Coronation* ground and a small mill has been installed; the erection of another mill on the *Lorne* property is in contemplation.

In the Pemberton area prospectors have accomplished some good work, and the tunnelling operations carried out by the Federal Mining and Smelting Company on the *Li-li-kel* property, although inconclusive, have influenced the decision to continue its development; another tunnel at a still lower level and on a more promising section of the vein-fissure is to be driven.

On both the *Eva* and *Silver Bell* groups underground development has afforded encouraging evidence of better values to be obtained with depth; on the former, in particular, the anticipation that good bodies of copper ore might be found in the strongly marked zone of shearing that traverses the property have been fulfilled in the discovery of one such lens of ore during the past season.

On the *Gold King* group work was confined to the surface; the property was the subject of examination by the engineers of the Britannia Mining and Smelting Company, Limited, and it is understood that plans for its further development have been arranged.

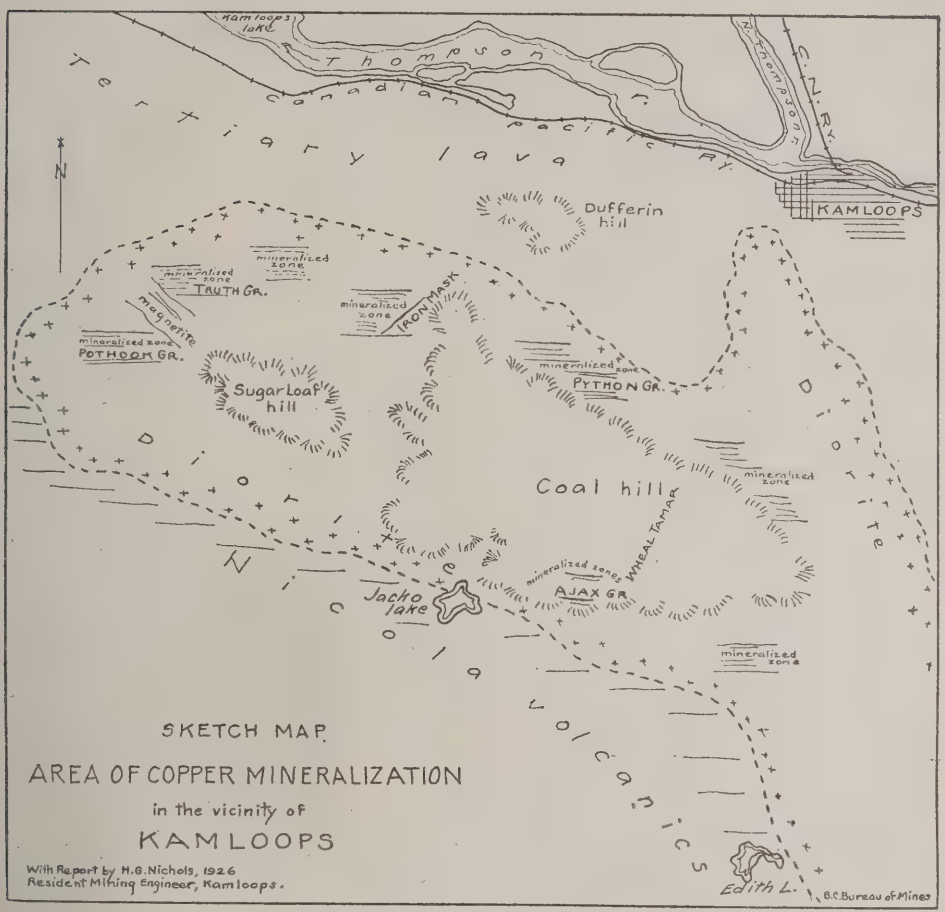
In the Adams Lake area the *Homestake* mine entered the producing class; 1,775 tons of silver-lead ore was shipped to Trail and development-work on a limited scale has thrown some interesting light upon the vexed problem of the ore occurrence. Shipments are being continued.

In the Seymour Arm area Cotton Belt Mines, Limited, has completed the work of camp construction and equipment and the company is now carrying on prospecting and development. A total amount of 3,300 feet of diamond-drilling was done during the season and tunnelling-work on the most attractive section of the persistent ore-zone is in hand. The chief disability under which this prospect has suffered by reason of the difficulties of transportation, etc., has been overcome by the energetic management and the thorough investigation of this interesting ore-body now appears to be assured.

In the Kamloops Mining Division other promising developments are to be noted in connection with the low-grade copper-deposits near Kamloops and with the mines and prospects in the northern area.

The outstanding feature of the area of copper mineralization is that it is identified with the body of a mass of diorite about 3 miles wide that extends from a point south of Knutsford to Cherry bluff on Kamloops lake, a distance of about 16 miles. This stock is overlain for about 3 miles of its length, north-west of the Ashcroft road, by more recent Tertiary formations; it is intensely fractured and the mineralization occurs in zones of this fracturing that traverse it from east to west. Within this mass of diorite there are inclusions of bodies of the intruded formations, which appear to have influenced the direction of the fracturing in their neighbourhood and to interrupt the channels along which the mineralization has spread. The *Iron Mask* ore-bodies occur under such conditions and the development of this mine, which is being actively prosecuted, is calculated to throw considerable light upon the possibilities of production of the area in general. There is a large tonnage represented in the several mineralized zones and their exploitation as a future source of supply is to be anticipated.

The renewal of operations at the *Windpass* mine at Chu Chua, with the prospect of early production, the continuance of development-work at the *Smuggler* mine at Birch Island, and favourable results obtained by prospectors at several localities are features of encouragement in connection with the development of the northern section of the country, tributary to the North Thompson river above Barriere.



Bibliography.

In addition to the reports of the Resident Mining Engineers that are published in the Annual Reports of the Minister of Mines, general information relating to the district is to be found in the following publications:—

Author.	Title.	Publication.
G. M. Dawson	Southern British Columbia	C.G.S.: Report of Progress, 1877–88.
G. M. Dawson	Mineral Wealth of B.C.	C.G.S.: Annual Report, 1887–88, Vol. 3, Part 2.
G. M. Dawson	Kamloops Map Area	C.G.S.: Annual Report, 1894, Part B.
J. McEvoy	Notes	C.G.S.: Summary Report, 1895, page 37A.
R. A. Daly	North American Cordillera	C.G.S.: 1912.
R. A. Daly	Geology of the Cordillera	C.G.S.: Guide Book No. 8, Part 2.
R. A. Daly	Golden to Kamloops	C.G.S.: Memoir No. 68.

The following list of references to areas and mineral-deposits within the district are arranged alphabetically in relation to the subject-matter:—

Author.	Subject.	Publication.
W. S. McCann	Bridge River Map Area	C.G.S.: Memoir No. 130.
C. W. Drysdale	Bridge River Area	C.G.S.: Summary Report, 1915.
C. W. Drysdale	Bridge River Area	C.G.S.: Summary Report, 1916.
V. Dolmage	Chilco Lake and Vicinity	C.G.S.: Summary Report, 1924, Part A.
D. B. Dowling	Coal Areas	C.G.S.: Memoir No. 69, page 280 *et seq.*
C. Camsell	Copper Mountain, Gun Creek	C.G.S.: Summary Report, 1918, Part B.
C. Camsell	Coquihalla Map Area	C.G.S.: Summary Report, Part B.
C. Camsell	Coquihalla Copper	C.G.S.: Summary Report, 1909, page 113.
C. Camsell	Coquihalla Copper	C.G.S.: Summary Report, 1908, page 63.
C. E. Cairnes	Coquihalla Area	C.G.S.: Summary Report, 1922, Part A, page 88.
C. E. Cairnes	Coquihalla Area	C.G.S.: Memoir No. 139.
C. Camsell	Diatomaceous Earth, Clay, and Magnesite along Route of P.G.E. Railway	C.G.S.: Summary Report, Part B.
N. L. Bowen	Fraser River below Lytton	C.G.S.: Summary Report, 1912.
L. H. Cole	Gypsum in British Columbia	Mines Branch, 1913, page 91 *et seq.*
B. R. MacKay	Hat Creek Coal	C.G.S.: Summary Report, 1925.
C. W. Drysdale	Highland Valley Area	C.G.S.: Summary Report, 1915.
C. E. Cairnes	Hillsbar Gold Group, Yale	C.G.S.: Summary Report, 1923, Part A.
A. M. Bateman	Lillooet to Chilco Lake	C.G.S.: Summary Report, 1912.
A. M. Bateman	Lillooet Map Area	C.G.S.: Summary Report, 1912.
L. Reinecke	Lillooet to Prince George	C.G.S.: Memoir No. 118.
C. Camsell	Lillooet Mining Division	C.G.S.: Summary Report, 1911.
C. Camsell	Mercury Deposits of Kamloops Lake	C.G.S.: Summary Report, 1918, Part B.
V. L. Eardley-Wilmot	Molybdenum	Mines Branch, 1925, page 32 *et seq.*
C. W. Drysdale	Molybdenum, Lillooet	C.G.S.: Summary Report, 1916.
C. E. Cairnes	Nickeliferous Mineral Deposit, Emory Creek, Yale	C.G.S.: Summary Report, 1924, Part A.
W. L. Uglow	North Thompson Valley	C.G.S.: Summary Report, 1921, Part A.
C. E. Cairnes	Pemberton Area	C.G.S.: Summary Report, 1924, Part A.
Bruce Rose	Savona Map Area	C.G.S.: Summary Report, 1912.
R. A. Daly	Shuswap Lake Area	C.G.S.: Summary Report, 1911.
C. Camsell	Skagit Valley Area	C.G.S.: Summary Report, 1911.
C. W. Drysdale	Thompson River below Kamloops Lake	C.G.S.: Summary Report, 1912.

Summary.

The area covered by the Central District forms an integral part of a mineralized belt. The mineral production of the district is increasing, but has not yet reached a stage commensurate with its extent and promise. Large areas are yet unexplored and excellent opportunities exist for prospecting. The following sections are recommended in particular:—

(1.) West of the Fraser river between Hope and Seton lake.
(2.) West of Okanagan lake between Penticton and Douglas lake.
(3.) The eastern section of the Vernon Mining Division.
(4.) The Pemberton area.
(5.) West of the North Thompson river from Chu Chua to north of Mahood lake.

It is believed that the district will take its place as one of the foremost producing areas of the Province and but awaits the impetus of initial success for the realization of this position.

KAMLOOPS MINING DIVISION.

Iron Mask. This property is situated at a distance of about 6 miles south-west from the city of Kamloops. The ore-deposits occur in a stock of diorite which is intruded into the Nicola formation; this stock of diorite is about 16 miles long and 3 miles wide. The *Iron Mask* property is of particular interest as it may be considered to afford the key to the solution of problems relating to a number of deposits of copper in this same area. For the greater part these deposits are low grade; they occur in zones of shearing and fracturing in the diorite and have an east-west direction.

PLAN OF WORKINGS

Scale: 0 100 200 300 Feet 400

With Report of H.G. Nichols, 1926
Resident Mining Engineer, Kamloops, B.C.

field of proposed exploration by diamond drilling

field of proposed exploration by diamond drilling.

mineral zone

FAULT AREA

mineral zone

A

NORMA shaft

cut Level

No. 2 Cross cut

750' Level

600' Level

ERIN shaft

600' Level

IRON MASK shaft

approximate outline of IRON MASK orebody 500' Level

600' Level

600' Level

750' Level

approximate boundary of fault area 750' Level

B

approx. outline of ERIN orebody 300' Level

surface contour 3000'

IRON MASK MINE

OF KAMLOOPS COPPER Co

KAMLOOPS, B.C.

Recent Exploratory work
Previous work

Section A-B

NORMA shaft

ERIN shaft

150' level

300' level

600' level

ore ore ore

No 2 Cross cut 750' Level

ore ore

3000'
2800'
2600'
2400'
2200'

B.C. Bureau of Mines

The ore-bodies of the *Iron Mask* property, which have been worked to a depth of 750 feet below the surface, strike north-east and south-west. The ore-shoots were approximately 175 feet long and varied from 5 to 30 feet in width. A considerable tonnage that ranged from 4 to 9 per cent. copper was mined in previous years. The *Iron Mask* ore-body was found to terminate against a wide zone of shearing, both on the 600- and 750-foot levels.

Examination of the rocks of which this wide zone is composed shows that it was originally a very basic olivine basalt and the suggestion is indicated that it represents a mass of included material that has been "stoped" around by the intrusive diorite. This rock is greatly sheared and altered with the development of serpentine, and it is believed that its presence was responsible for the localization of the fractures in which the ore-bodies occur.

At a number of places in the old workings there are indications of intersecting seams having the east-west strike which is the normal direction of the ore-zones within this area, and recent work has been devoted to the location of these "main ore-channels."

The "fault" zone crosses the *Iron Mask* bodies in a north-west direction and, following the hypothesis outlined above and on the assumption that the included mass of rock which has interrupted the normal course of the mineralization may terminate abruptly in depth, extensive prospecting has been done in the likely area to the north.

This work was commenced by sinking a shaft at a distance of over 2,000 feet to the north-west of the old workings, from which it was proposed to crosscut back, paralleling the fault-zone on its eastern side. A heavy flow of water was encountered in this shaft and the work was resumed from the lower levels of the old workings.

During 1926 about 3,000 feet of tunnelling has been done on the 600- and 750-foot levels, and on the former horizon a body of ore has been picked up which agrees approximately with the calculated position for an east-west ore-body. Drifting on this ore-body has been commenced. A seam of high-grade ore about 14 inches wide has been opened up, with the promise of from 4 to 5 feet of ore of milling grade. An interesting feature of this occurrence is that there is an alteration in the gangue in two different sections of the ore-zone, from gypsum to calcite.

On the 750-foot level, and also to the east of the fault-zone, another ore-body having the same east-west strike has been crosscut and drifted on. So far as development has proceeded, this ore-body is shown to be about 120 feet long and 3 feet wide, with an average content of about 3½ per cent. copper, occurring as chalcopyrite in a gangue of gypsum.

These discoveries cannot be considered to be of great economic value in themselves, but they are held to be sufficiently encouraging to warrant further work; an active campaign of diamond-drilling is therefore to be initiated, with a view to proving the continuance of these "main ore-channels" to the west and to determine the extent in depth of the included mass which constitutes the fault-zone.

It only remains to add that there is a considerable tonnage of oxidized ore still left in the old workings, and several outcroppings of such ore in the immediate vicinity of the mine lend weight to the anticipation that further bodies of ore may be discovered.

Through the courtesy of the manager, A. E. Wallinder, a plan of the workings accompanies this report.

Copper Creek Cinnabar.

Some desultory work has been carried on at this property on the north shore of Kamloops lake during the year. This work has been devoted to the extraction of some high-grade ore from the small Rosebush ore-shoot, and five flasks of quicksilver have been retorted from it. A certain amount of prospecting has also been carried on to investigate the possibilities of low-grade production, and it is believed that the future prospects of the property are to be considered in this relation.

An examination of the property was made during 1926 by V. L. Eardley-Wilmot, mineral technologist of the Mines Branch of the Dominion Department of Mines. It was ascertained that, in addition to the knife-blade seams of cinnabar which are found ramifying throughout a large area of soft, decomposed rock, there is also a certain amount of native quicksilver disseminated in it. Bulk samples were taken for testing in the laboratories at Ottawa, and should it be found that the occurrence of this native quicksilver is of sufficient importance it is possible that a new outlook may be provided for these properties.

Homestake.

As stated in the Annual Report for 1925, this mine, situated near Squaam bay on Adams lake, was reopened in August of that year. In past years this property attracted attention mainly on account of the notable bodies of silver-

bearing barite which are found outcropping in the Pre-Cambrian schists. These bodies of barite lie conformably with the bedding-planes of the formation, which have a flat dip, and in previous work a crosscut had intersected a seam of high-grade silver-lead ore lying in the hanging-wall country-rock. Samples of this seam taken at different times had indicated a silver content of approximately 80 oz. to the ton.

An option was acquired by W. J. Bell and associates for the purpose of investigating the possibilities in connection with this high-grade seam, and during the year 1925 a considerable amount of prospecting and development work was carried on. The results of this work, which included several hundred feet of drifting, raising, and sinking, were sufficiently encouraging to warrant the commencement of shipments and during 1926 these have been steadily maintained; a special grant having been made by the Mines Department for the purpose of repairing the road to Louis Creek from the Canadian National Railway, a distance of 21 miles, by which the hauling of this ore in motor-trucks was made possible. During the year 1,775 tons of ore, averaging nearly 90 oz. silver to the ton, was shipped to Trail, and it is estimated that an approximately similar amount is in sight.

A small compressor has been installed and development has been carried on in advance of the stoping operations. The winze from the old level has been sunk to a depth of 150 feet on the dip of the seam, but the grade of the ore was not maintained. A crosscut, however, which has been driven from the winze back towards the foot-wall, at a depth of about 40 feet below the old workings, has indicated greater possibilities. A 12-inch seam of ore which assayed $115 a ton was encountered by this crosscut, and it is also indicated that below the old workings the dip of the formation and of the barite body lies at a steeper angle.

From the results of development to date, it appears as though there is a mineralized belt closely related to the occurrence of barite, in which there is a series of lenses of ore lying *en echelon*. In the upper levels of the mine quartz with ruby silver and free gold is found in spots. The development of this mine is of particular interest as there are many similar occurrences of mineralized seams, lying with the bedding-planes of the schists, in this locality. The occurrence of barite, however, is characteristic of the *Homestake*.

Rhode Island Lead Co.

This property, which was formerly operated by the Adams Lake Mining Company, has been recently acquired by a local organization of the above name. This property is located on the east shore of Adams lake, almost opposite Squaam bay, and comprises a group of six claims, upon which there is a total amount of about 300 feet of underground workings in addition to a number of surface cuts. There are several outcrops, but the ore occurrence upon which most of the work has been done appears to be related to a zone of fracturing about 100 feet wide. Within this zone several bunches of lead-zinc ore have been encountered and two small trial shipments have been made to Trail.

Acacia.

This property is situated at an elevation of about 1,800 feet above Pass creek and almost immediately opposite the *Homestake* mine. Two seams of zinc-lead mineral lying conformably with the formation have been exposed by H. R. Graham in surface cuts and tunnels. They are from 4 to 8 inches in width and there is some impregnation of the wall-rock. These seams are characteristic of the mineralization that is found throughout this section, which is occupied by the altered schists of the Bastion formation. Other examples are found on the *New Gem* and the *Discovery* group, owned by G. H. Brock, and at Rankin's property at the mouth of Squaam bay.

The ore on the former claims, which are situated at a slightly higher elevation than the *Acacia* and on the other side of a steep ravine which exposes the formation for some 100 feet in thickness, is said to occur in wide seams; on Rankin's property a series of mineralized seams has been exposed in open-cuts for a considerable distance. One of these seams is 7 feet wide, with patchy inclusions of chalcopyrite, zinc-blende, and galena.

Silver Mineral.

No recent developments are to be reported in connection with this property on the East fork of the Barriere river. The same remark applies to the *Schilling* group and other silver-lead prospects in this section, the opening-up of which has been held back by the delay, due largely to forest-fire troubles, in completing the new road and trail, for which a substantial appropriation has been made by the Department of Mines.

Silver Lake. Situated 20 miles north-west from Mount Olie, on the Canadian National Railway and at an elevation of about 5,600 feet, this property has been under development by Pete Johnson and was examined during the summer of 1926 by a representative of the Victoria Syndicate, Limited. A number of open-cuts, tunnels, and shafts has proved the continuity of a mineralized zone of shearing in a black argillite formation, near the contact with an intrusive rock, for a distance of approximately three-quarters of a mile. The chief metallic content is zinc, associated with which is some lead and silver. A sample across 6 feet of a mineralized seam in the shear-zone assayed: Zinc, 12 per cent.; lead, 2 per cent.; silver, 35 oz. to the ton.

At a distance of about 100 feet from this seam, and paralleling it for the greater part of its length, there is another quartz-seam with grey copper. This is a promising prospect, but requires more work to be done upon it, in the direction of open-cutting along the shear-zone to provide sections for systematic sampling.

Windpass. A description of this property was given in the Annual Report for 1925. The option which was held, and under which the work then described was carried on, was relinquished in the early part of the year and operations were suspended. The immediate reason for this abandonment was the failure to prove a sufficient continuity for the ore occurrence which had been found to extend to the 400-foot level. There is an ore reserve which has been variously computed as having a gross value of between $200,000 and $300,000.

During the summer the mine was examined by a representative of the Porcupine Gold Fields and Finance Corporation and a large number of samples were taken. The problem in regard to the continuity of the ore, however, again stood in the way of successful negotiations.

The mine was reopened by the owners in the fall of the year and work has been resumed under the management of A. W. Davis. A semi-Diesel engine and compressor has been installed and a vigorous campaign of development is in progress. The main object of this work, it is understood, will be to sink the main winze to a greater depth, and to thoroughly explore the country lying to the north-west and in the foot-wall of the seam which has been followed down.

As previously stated, some exceptionally good ore is showing up on the bottom of the No. 4 level and the opinion that was formulated in the 1925 report is still held—namely, that the situation in regard to ore reserves can be improved. There is, in fact, enough ore in sight at the present time to justify the erection of a small plant, and the present plans embrace the possibility of erecting a mill on Dunn creek during the coming summer, to which the ore of the adjacent *Sweetholm* property would also be tributary.

Smuggler. This property, which is situated about 2½ miles south of the Canadian National Railway track at Birch Island, has been actively prospected by a local syndicate and has aroused considerable interest by reason of the discovery of several bodies of silver-lead ore of good grade.

The ore occurs within a mineralized zone in a schist formation, close to a contact with quartzite, which forms the ridge of a hill flanking Foghorn creek on the east. Quartz carrying silver-lead minerals occurs in the form of seams and bodies, filling fractures and replacing the soft country-rock which has been intensely disturbed and shattered. There is evidence that there has been an intrusion of an acid igneous rock, probably related to the disturbance and folding of the ground, with which the mineralization is associated. There was some question at one time as to whether these bodies of ore were in place, but as a result of the work which has been done there is now no doubt on this score.

In addition to a number of surface cuts in which some considerable bodies of quartz were exposed and bottomed, two tunnels have been driven along the strike of an ore-body which seems to promise greater continuity. Some high-grade ore has been encountered in these workings and a shipment of 15 tons was sent to the Trail smelter, which yielded a gross return of $35 a ton.

The general direction of mineralization that is indicated parallels the line of contact between the schists and quartzite. In view of the number of exposures and the occurrences of high-grade ore, there would appear to be a reasonable possibility of locating at moderate depth an ore-body of economic importance. Camp buildings have been erected and work has been continued through the winter.

Minnesota Girl. J. Schlichter continued his crosscut tunnel to intercept the ore-body which outcrops 200 feet above. The tunnel was extended to a total distance of 200 feet and a body of quartz was passed through. This quartz was drifted

on for a few feet; it appears to have been displaced. The property lies on the same hill as the *Smuggler*, on the opposite side of the quartzite ridge. There are some quite large bodies of quartz carrying zinc and lead minerals, with some gold and silver values, occurring in partly filled fractures in the belt of quartzite, which shows evidence of the same general disturbance that is characteristic of the formation of this hill.

This tunnel-work represents the deepest workings on the hill and reflects great credit upon the patience and energy of a lone prospector working under difficult conditions.

Bonnie Brae. On Mount Ida, 1½ miles from Salmon Arm, a group of claims of this name has been located by Daggett & Cox, of Salmon Arm, covering a number of exposures of quartz with silver values. The ore occurs in a belt of quartzites and schists, not previously reported, and included in the granite area occupied by the base of the mountain. Although several open-cuts have been made, the work is insufficient for a definite statement as to the character of the deposits. It may be said, however, that there is a large development of quartz in what appears to be a continuous zone of shearing, and that values in silver up to $22 a ton were obtained from selected samples.

The ideal position of this property, situated at such a short distance from the main line of the Canadian Pacific Railway, is an attractive feature and further investigation of the mineralization in this formation is warranted.

Last Chance. A group of claims of this name has been located by J. W. Smith on the west side of Mara lake, and several shafts, tunnels, and open-cuts have been sunk and driven alongside the track of the Canadian Pacific Railway. The rocks here exposed are the lowest members of the Shuswap formation, comprising sediments and sills of hornblende intrusive. There is also a pronounced fracturing cutting the general north-westerly trend of the formation, with a number of quartz veins and silicified seams. Some of these are said to carry gold values.

Cotton Belt. Work has been continued on this property, north of Seymour arm, during the year and reflects credit upon Cotton Belt Mines, Limited, the Vancouver company which, under the management of B. F. Lundy, with F. W. Guernsey as consulting engineer, has continued an aggressive campaign of investigation under considerable difficulty.

Substantial appropriations were made by the Department of Mines for the purpose of trail-construction to permit of the packing-in of machinery and supplies for carrying on this work. An amount of over 60 tons of material has been taken in with pack-horses and excellent buildings have been constructed at the property. Cabins have been also erected on the trail to minimize the difficulty of packing. The programme of work that was carried out during the summer consisted of surface-trenching and diamond-drilling.

The following information, taken from the consulting engineer's report, is made available by the courtesy of the management:—

"The surface-trenching exposed some promising-looking outcrops on the *Cotton Belt* and *Joe* claims, showing widths of 5 to 10 feet of lode. Sixteen holes were put down by means of a diamond-drill at different points on the hanging side, and covering, along the strike of the lode, a distance of 6,500 feet. The total footage drilled amounted to 3,333 feet. Fifteen of these holes cut the lode at depths from the outcrop of from 270 to 370 feet along the dip, indicating that the lode has a width of from 4 to 12 feet and is of unbroken continuity. The most promising indications were obtained from the holes drilled on the *Joe* claim, and it is on this and the *Cotton Belt* claim that the surface outcrops are the strongest.

"The drilling was greatly retarded by the lack of water necessary for drilling owing to the dryness of the season. The contract has not been completed and it is the intention of the contractors to return next season and finish their contract.

"It is recommended that the balance of the drillings shall be done on the *Cotton Belt* and *Joe* claims, and in the meantime the main tunnel can be driven to explore the lode under the surface showings on the *Cotton Belt* and *Joe* claims, and by crosscutting expose the width of the mineralized zone.

"The other activities on the property during the season were the building of suitable quarters for taking care of an adequate force of men and housing the machinery and supplies

necessary for the prosecution of further exploration. These have all been completed and the company is to be congratulated on the quality of the buildings erected.

"A great deal of work has had to be done on the road and trail in order that the machinery and supplies might be transported to the property.

"While the results of the diamond-drilling have not come up to what one would wish, the width of the mineralized zone has been shown to be greater than was anticipated, and the area in which underground work may be prosecuted at first, at least, has been, it is considered, definitely established. At a later date more exploratory work on the less promising portions of the lode can be undertaken."

Tunnelling-work, as indicated in the above report, is being continued throughout the winter. This property is of considerable interest, affording as it does an example of what may be expected in the belt of Pre-Cambrian rocks in which it is situated.

The ore-zone paralleling a belt of crystalline limestone on its foot-wall side has been traced over the surface for over 2 miles. The economic operation of the property depends upon whether there are ore-shoots of sufficient width to provide the assurance of a tonnage concomitant with the requirements in connection with a low-grade ore-body situated at some distance from transportation.

Raft River. Neil Morrison did assessment-work on a group of claims about 20 miles up the Raft river, north of Vavenby, on the Canadian National Railway. These claims lie in another promising section, the development of which has been retarded owing to transportation difficulties. A further grant was made for trail-work.

Summit and War Colt. The ore-bodies occurring in the district north of Clearwater lake were examined by a representative of the Porcupine Goldfields Development and Finance Corporation. There are some attractive bodies of lead-zinc ore, but owing to the distance from transportation the present value of these properties has been considered in relation to associated gold and silver values and results of sampling in this regard were not sufficiently encouraging. Further assistance was afforded by the Department towards the betterment of the 40-mile trail and it is felt that the development of this likely country is bound to mature at a later date.

Louis Creek Placer. A systematic attempt is being made to investigate the possibilities of an attractive stretch of placer-ground at the confluence of Louis creek with the North Thompson river. The occurrence of gold in the gravels of this creek has been known for some considerable time and several attempts have been made to work them by sluicing on a small scale. During 1926 a syndicate in which Edmonton capital is interested, with R. M. Read in charge of operations, acquired a number of holdings and completed plans for hydraulicking operations along the lower reaches of the creek.

At the lower end, where the creek emerges from the narrow valley, a certain amount of concentration appears to have taken place around the rim of a wide sweep of the North Thompson river. The work which has been carried out so far by the syndicate has been in the nature of a test run of a few hundred yards of gravel from this lower section of creek-bed. A bucket elevator was used in order to excavate down to bed-rock, and a satisfactory clean-up was made by the use of a monitor under a low head of water, with a bed-rock flume about 75 feet long. Some coarse gold was recovered and it is estimated that the clean-up averages rather better than $1 a cubic yard.

The syndicate is planning the building of a mile-long flume by which water can be delivered to monitors under a head of about 250 feet, and should the ground continue to prove satisfactory the work will be carried on up the creek-valley.

The syndicate has already acquired several placer leases covering the flats and benches along the valley of the North Thompson below Louis creek, and should the present operations prove to be encouraging it is understood that the systematic drilling of this ground is to be considered.

Gypsum.

Operations at the gypsum-deposit at Falkland, on the Kamloops–Kelowna branch of the Canadian National Railway, have been continued by the British Columbia Gypsum Company and steady production has been maintained.

CLINTON MINING DIVISION.

Watson Bar Creek.

E. J. Taylor and W. Tremble did assessment-work on their claims at the head of this creek, where there are deposits of antimonial silver ore.

Ward Bar Creek.

R. F. Butler has been opening up the ore-body on his *Buster* group of claims, situated near the head of Ward Bar creek at an elevation of about 4,600 feet and at a distance of approximately 4½ miles from the Fraser river. He reports having uncovered a vertical ledge 5 feet wide, below the outcrop of an 18-inch seam of heavy mineral that assayed 47 per cent. antimony, with silver values.

Soda.

Following the installation of a dehydrating plant, with a capacity of 20 tons of soda-ash a day, operations on the extraction of soda from the lakes in the vicinity of the 74-Mile House on the Cariboo road were suspended for a time, pending the completion of certain negotiations. It is understood that satisfactory arrangements have been made and that production will be resumed on a larger scale. Two car-loads of soda-ash and two car-loads of raw soda were shipped during the year over the Pacific Great Eastern Railway.

Several car-loads of soda have been shipped from Lela lake by the Janes Estate and by C. W. Austin from his holdings in the vicinity.

Placer-mining.

Placer-mining operations have been continued on Watson Bar creek by Daly, Johnson & Munro. The work has been handicapped by shortage of water.

Thirteen placer bench leases on the east bank of the Fraser river, south of Kelly creek, were taken up for outside interests by D. J. Stewart, of Pavilion. Some testing-work has been carried on.

One bench lease and one dredging lease on the Fraser river at Big Bar have been retained by Grim & Myers. Test and development work has been carried out in connection with both leases and some good prospects have been obtained. The work included over a mile of ditching and the installation of a hydro-electric plant, cable and hoist, with 1,700 feet of steel and wood pipe of from 24 to 12 inches in diameter. A shortage of water caused a temporary suspension of the operations.

L. F. Green and associates, of Vancouver, have secured eight bench leases on both banks of the Fraser river at High Bar.

W. H. Hammond and associates, of Ashcroft, have taken out three bench leases and one dredging lease on the east bank of the Fraser river above Big Bar.

LILLOOET MINING DIVISION.

Pioneer. The operations upon this property on Cadwallader creek, in the Bridge River area, under the superintendence of D. Sloan, have been productive of extremely satisfactory results. The shaft was continued to a further depth of 160 feet and a crosscut was run to the vein, which was drifted upon, east and west, for 300 feet. For the whole of this distance the drift was in ore and a stope has been commenced up to the level above. The vein on the bottom level varies up to 5 feet wide, and the average value, as calculated from an eight-day run on the ore won from development, was over $50 a ton.

The milling operations were restricted to a certain extent owing to a shortage of water, but the production in bullion for 1926 was nearly $100,000. Ore reserves have been increased to the extent of a total estimated value amounting to over half a million dollars.

It is understood that future plans have not been finally settled, but it is under contemplation to install a new power and equipment plant to handle 100 tons a day.

The successful results of the operation of this property have had a stimulating effect upon development in the camp, and it is generally felt that the anticipations in regard to the future of this gold-producing area are near fulfilment.

Coronation. At this property, adjoining the *Pioneer*, the shaft has been sunk to further depth of 100 feet and 800 feet of drifting has been done on the lower level. About 500 feet of this drifting was in ore that would probably pay to mill.

Although the vein is small and the values are not spectacular, it is estimated that the ore on this lower level is probably as good as that which was previously extracted from the *Little Joe* ore-body. This ore averaged about $60 a ton.

A small mill and water-power equipment have been installed and milling will be commenced early this year. Some diamond-drilling was also done on this ground, two holes being put in to depths of 500 and 548 feet respectively. It is understood that the results of this work were not altogether satisfactory owing to the small recovery of core. A vein with nugget gold was cut in one hole.

Lorne. An option on this group of claims, which adjoins the *Coronation* on Cadwallader creek, has been acquired by Seattle operators, and it is understood that plans have been made for a programme of development and for the installation of a small mill during the coming season.

Taseko River Camp.

This camp, in the Taseko River area, was the subject of investigation by the Victoria Syndicate, Limited. The representatives of the company made a detailed examination of the *Windfall, Motherlode, Tennessee, Spokane,* and *Syndicate* groups.

The work done consisted of surface-stripping and open-cuts. Several wide mineralized shear-zones in the granite with low values in gold and copper were exposed. These zones may provide the basis for the discovery of ore-bodies of economic value.

The development of the camp in general has not yet proceeded to the stage when any definite estimate of claim values can be made. Mineralization is on a scale that makes the area an attractive one for prospectors.

Assessment-work was also performed on the *Massena* group by J. Russell and H. Swartz, who also carried out similar work on the *Native Son* group on Leckie creek.

Shulap. A considerable amount of open-cut work was carried out by Russell and Swartz on their *Shulap* group of claims on Boulder creek, in the Shulap range. Free gold has been discovered in certain zones of shearing in a recent volcanic formation.

Cayoosh Creek.

The Stave Lake Mining Company has been doing some work preparatory to a renewal of placer-mining operations in the wide basin of this creek above the falls, on the south side of Seton lake, near Lillooet. This basin, which is about 1,000 feet wide by 1,000 feet in length, was the scene of activity some sixty years ago, when the Chinese placer-miners were said to have taken out large amounts of gold.

The Chinese workings were carried down to a false bed-rock of clay. More recently an attempt was made to prospect the ground below this level and some drilling was done, the results of which were inconclusive. A bed-rock bar across the creek, above the falls, was cut down to a depth of about 20 feet and a great part of the channel that had been worked was scoured out by this lowering of the creek-bed.

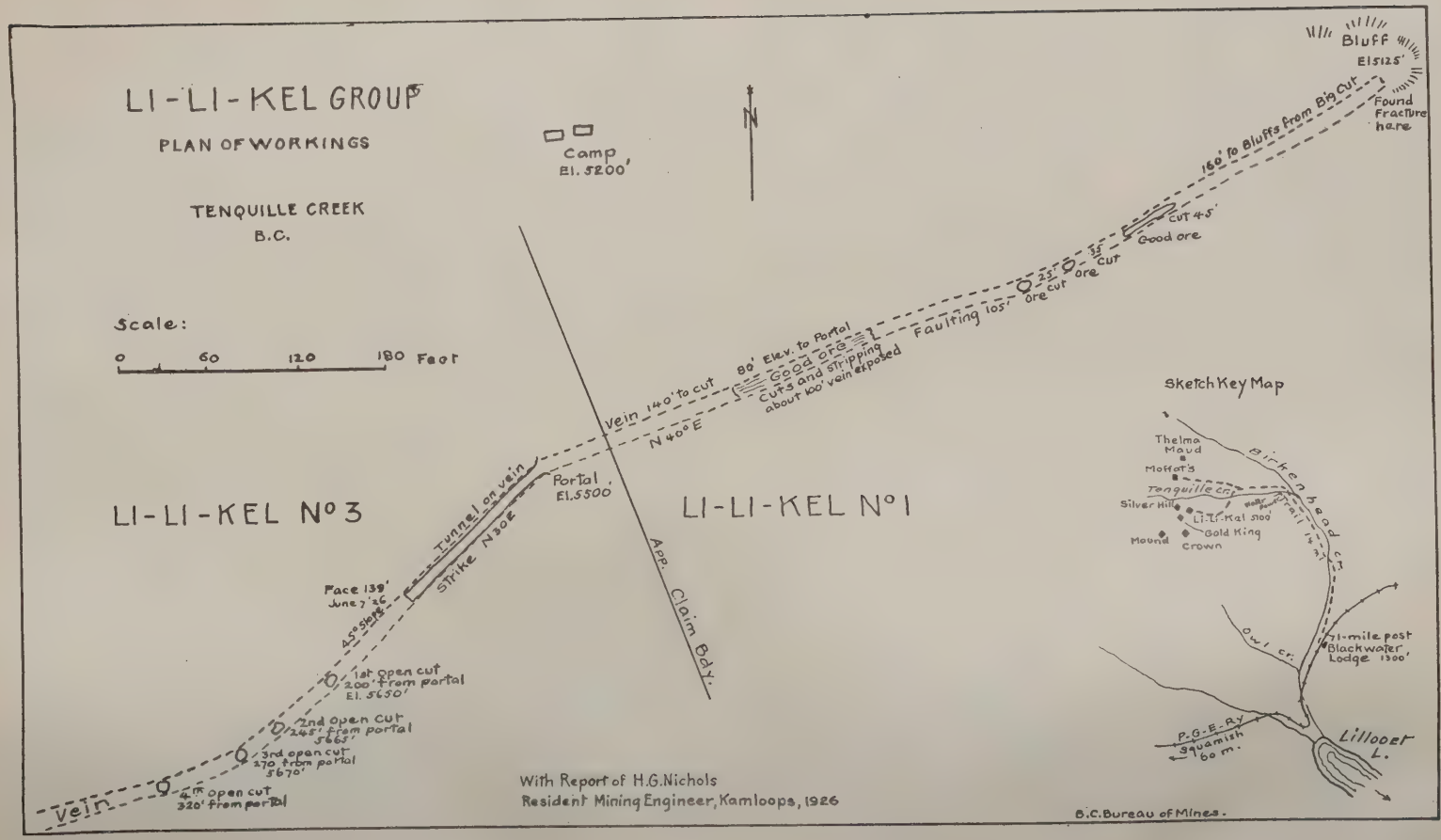
The present operators are proposing to make another cut through this bar in order to reach the actual bed-rock. So far only preparatory work has been done, in the way of digging a ditch for the diversion of the stream from a point about 1,200 feet above the falls.

In connection with this project the general inadvisability of following the footsteps of the Chinese placer-miners should be borne in mind.

British Columbia Alluvials, Ltd. The extensive preparations that have been carried out by this company under the management of Cooper Drabble have met with a number of disappointments, but it is satisfactory to note that there is a probability of more successful results in the near future. The work, which has been carried on for some years past, had for its main object the diversion of the Bridge river from its bed, where it swept around the outside circle of the Horseshoe bend, 21 miles above Lillooet, in order to expose the gold-bearing gravels below it.

A flume was built 13,800 feet long and over 3,000 feet of pipe-line, ranging from 36 to 9 inches in diameter, was installed, giving an actual head of 340 feet. The equipment included three monitors, donkey-engine, derricks, elevator for a 35-foot lift, and several subsidiary works, such as suspension bridges, etc.

The work of diversion was successfully carried out, the cut around the inner circle of the bend being 1,500 feet long and 250 feet wide, and the river has now cut down this channel to an


LI-LI-KEL GROUP
PLAN OF WORKINGS
TENQUILLE CREEK
B.C.
Scale:
0 60 120 180 Feet
Camp
El. 5200'
N
Bluff
El 5125'
Found Fracture here
150' to Bluffs from Big Cut
Cut 45'
Good ore
Faulting loss
ore cut
Vein 140' to cut
80' Elev. to Portal
Good ore
Cuts and stripping
about 100' vein exposed
N 40° E
LI-LI-KEL No 3
LI-LI-KEL No 1
Tunnel on vein
Portal
El. 5500
Strike N 30 E
45° SW
Face 139'
June 7 '26
App. Claim Bdy.
1st open cut
200' from portal
El. 5650'
2nd open cut
245' from portal
5665'
3rd open cut
270 from portal
5670'
4th open cut
320' from portal
Vein
Sketch Key Map
Thelma Maud
Moffat's
Tenquille cr.
Silver Hill
Li-Li-Kel 5100'
Gold King
Crown
Mound
Birken head cr.
Owl cr.
71-mile post
Blackwater Lodge 1300'
P.G.E.Ry
Squamish
60 m.
Lillooet
L.
With Report of H.G.Nichols
Resident Mining Engineer, Kamloops, 1926
B.C. Bureau of Mines.

Li-li-kel Mine, Lillooet M.D.

Tenquille Creek, Lillooet M.D.

average depth of 15 feet into bed-rock at the intake and for 450 feet down-stream. Although some good "pay" was found in the gravel-bed of the old channel, this ground was found to be honeycombed with old Chinese workings and the results, as stated above, were not as anticipated.

A length of 800 feet of virgin channel has now been opened up at the upper end of the bend, where the main canyon enters the Horseshoe. The gutter of this channel carries coarse gold and was partially exposed owing to the cutting-down of the river in regrading its course through the diversion cut; subsequent testing has indicated that this stretch of ground is likely to yield several good clean-ups. The work is being actively carried on so as to take advantage of the low-water season. A 700-foot crib dam is being built, blocking the mouth of the channel, and is being carried along the bar longitudinally in order to divert the river.

An interesting feature in connection with these gravels is the occurrence of nuggets of the nickel-iron alloy, souesite, which has an average composition of 72 per cent. nickel, 28 per cent. iron. These nuggets are found up to the size of a pea.

Index. No further developments are to be recorded on this deposit of molybdenite ore on Texas creek, but a renewed interest is being taken in it on account of the improved market outlook due to the increasing use of molybdenum in the manufacture of steel.

Mineral Mountain Mines, Ltd.—Some prospecting was initiated by this company upon a deposit of lead and zinc ore which occurs as a replacement in a band of limestone on the east side of Anderson lake, near D'Arcy, at an elevation of about 3,000 feet above the level of the lake.

Li-li-kel. Work on this property, near the headwaters of Tenquille creek in the Pemberton area, has been continued by the Federal Mining and Smelting Company, which has had the property under option from the owner, T. Lewis, for the past eighteen months. Exceptionally high silver values are found in fissure-veins cutting a volcanic formation. The property has been described by C. E. Cairnes in the Summary Report for 1924, Canadian Geological Survey.

A tunnel driven on the main fissure was continued for a distance of about 250 feet. The width of the ore was found to vary considerably and values were erratic. There appeared to be some grounds for believing that the extent of the mineralization is dependent upon the character of the formation which is intersected by the fissure.

As pointed out by Cairnes, there are alternating bodies of a porphyritic and a chloritic volcanic rock and the better values appeared to be found where the fissure passed through the porphyritic variety.

It is understood that another lower-level tunnel is to be driven which will pass through a section of the porphyritic country, in which a number of intersecting fractures occur, with some wide outcrops of silver-lead ore.

Gold King. Assessment-work was done on this group, owned by C. Barbour, A. McLeod, and associates, and the property was examined by representatives of the Britannia Mining and Smelting Company, Limited, who also inspected the other claims in this camp in the Pemberton area. The surface work that has been done thus far has hardly effected more than to prove the continuity of a wide mineral-zone with a heavy iron-capping, although indications are not lacking that development in depth may establish the existence of a large body of ore with values in zinc and gold of a payable grade. It is anticipated that plans for the further development of this property will be completed in the near future.

Eva. George Moffat continued his development of this property and struck a lens of ore in his underground workings which looks promising and bears out the view expressed in last year's report, that lenses of ore will be found in this well-defined shear-zone, which parallels a quartz-porphyry dyke. This property, in common with others in the camp, was examined by representatives of the Britannia Company during the summer. A sample across the face of the lens of the ore above referred to assayed: Gold, 0.01 oz.; silver, 0.9 oz. to the ton; copper, 3.8 per cent.; zinc, 0.1 per cent.

Silver Bell. Some high-grade silver-lead-zinc ore has been encountered in underground workings at a depth of 150 feet below the outcrop of this property. A sample of this ore assayed: Gold, 0.05 oz.; silver, 23.8 oz. to the ton; lead, 23.8 per cent.; zinc, 13.3 per cent. T. Charleton and associates are the owners.

ASHCROFT MINING DIVISION.

Gypsum.

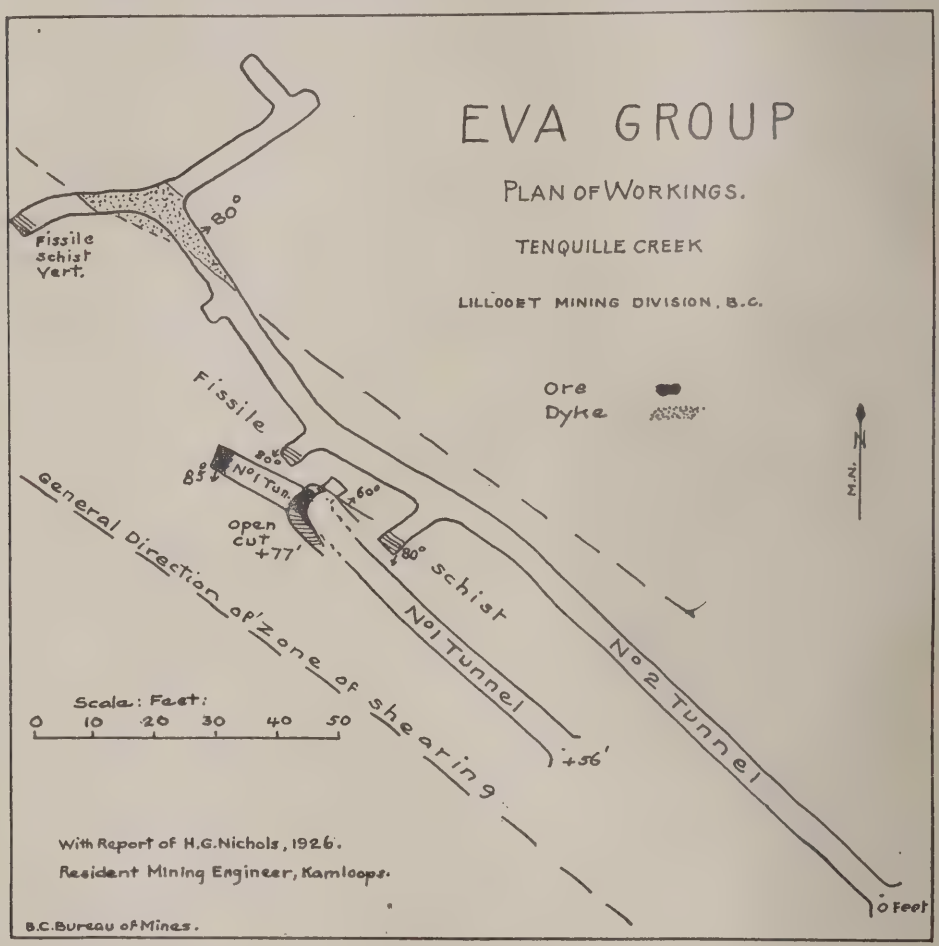
The gypsum-deposits at Spatsum, on the Thompson river, have been examined by the engineer of an influential corporation.

Highland Valley.

There has been very little activity in this section during the year.

Placer-mining.

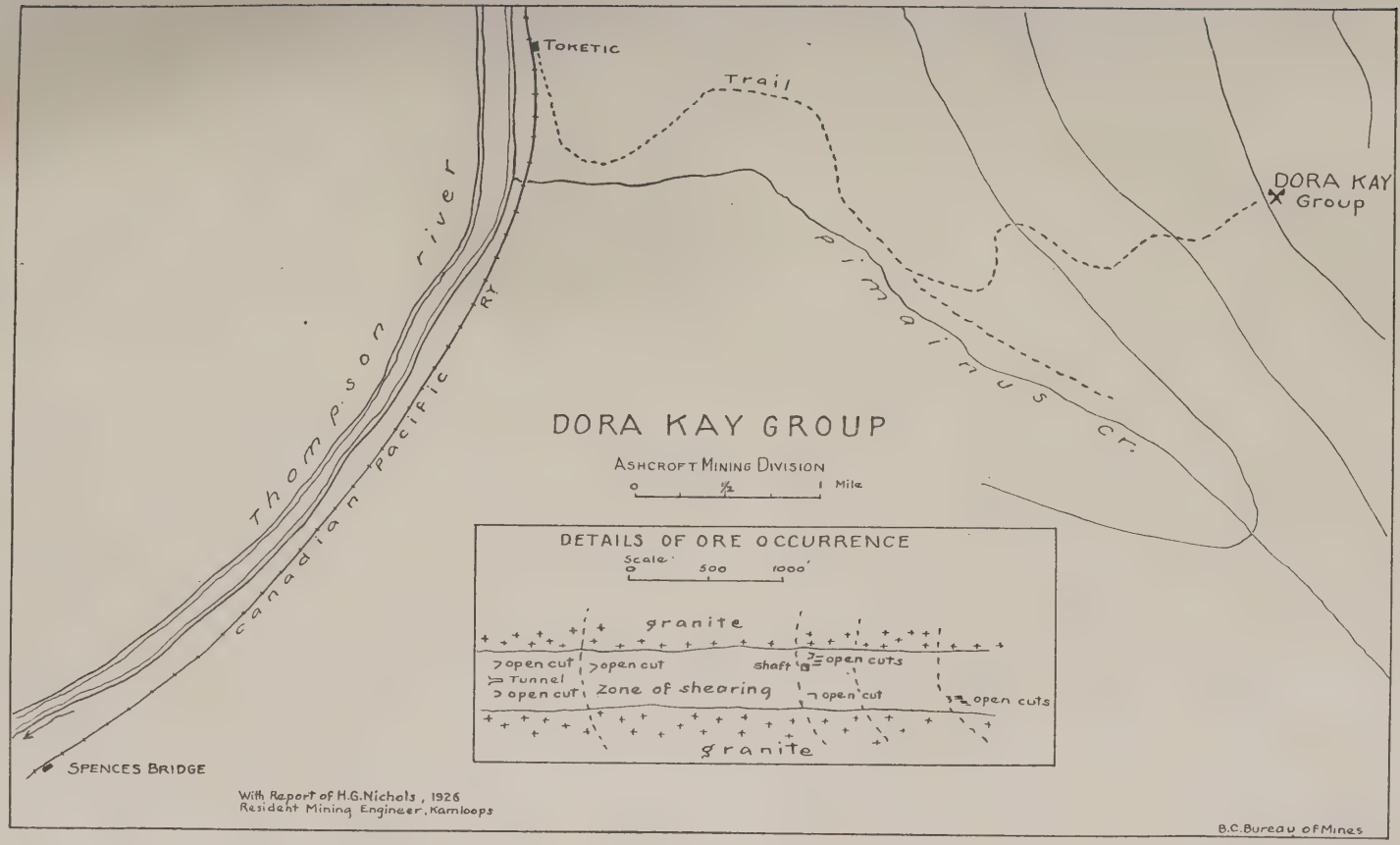
Some sluicing operations were undertaken during the early part of the year on some bench ground along the Thompson river above Spences Bridge. Some good values were recovered, but the boulders were too big for the limited equipment available.



Steyn Creek.

The discovery of gold quartz on this creek, north-west of Lytton, is reported. The precipitous character of the country on the west side of the Fraser river from Lytton to Lillooet has retarded prospecting, but this country is believed to hold considerable promise.

Dora Kay. This group of six claims is situated at a distance of 4 miles east of the Canadian Pacific Railway flag-station at Toketic, 4½ miles above Spences Bridge. The property is held by J. Negrean, of Kamloops. It is reached by trail from Toketic up the right bank of Pimainus creek for a distance of 2½ miles and thence by steep ascent over open grass-covered slopes.


TOKETIC
Trail
DORA KAY
Group
thompson river
canadian pacific RY
Spences Bridge
Primaus Cr.
DORA KAY GROUP
ASHCROFT MINING DIVISION
0 ½ 1 Mile
DETAILS OF ORE OCCURRENCE
Scale
0 500 1000'
granite
open cut
Tunnel
open cut
open cut
shaft
open cuts
Zone of shearing
open cut
open cuts
granite
With Report of H.G. Nichols, 1926
Resident Mining Engineer, Kamloops
B.C. Bureau of Mines

The mineral occurrence is hæmatite-iron ore which has been uncovered in shallow workings over a horizontal distance of approximately 3,000 feet and at horizons varying between 4,300 and 5,150 feet above sea-level.

The ore occurs as a metasomatic replacement, associated with tourmaline in seams, and disseminated throughout a zone of shearing, approximately 300 feet wide, in the granite formation. There is a small amount of copper impurity, more especially in the massive seams which conform to the general east-west trend of the shear-zone, but veins of pure specular hæmatite occur in crossing fractures and in patches in the crushed rock. The extent of the mineralization is impressive and more development might be carried out with profit, although the history of iron-ore deposits of this class is not encouraging.

YALE MINING DIVISION.

Independence. This copper property, which was reported on by Charles Camsell and was under option to the Granby Mining and Smelting Company at one time, has been further prospected by J. Holmes. Situated within 2 miles of Coquihalla Station, on the Kettle Valley Railway, it has particular attraction on the score of accessibility. There are five claims in the group, as follows: *Independence*, *Butc*, *Boston*, *Bank*, and *Merry*. Recent work indicates possibilities which do not appear to have received enough consideration in regard to the mineralization of areas of crushed rock related to a system of intrusive dykes. The extent of these areas, as indicated in a number of open-cuts, adds materially to the possibilities of tonnage, upon which the future of this property must depend.

The old work was devoted to the development of a body of ore that was cut by a 300-foot tunnel at a depth of 175 feet below the outcrop, and a considerable amount of raising, sinking, and crosscutting was done. This ore occurs in a zone of crushed granite porphyry alongside a dyke of syenitic rock and is about 45 feet wide. Its lateral extent has not been determined, as the tunnelling-work was diverted along a fracture in which some patches of high-grade ore occur.

The main tunnel, which has been described as following a main fracture, is in reality a crosscut and intersects a number of similar dykes, more or less parallel to one another. The work that has been done recently has outlined large areas of similar crushed rock on the surface, and the sections of this ground that are intersected by the series of dykes above referred to should constitute a profitable field for exploration.

Emancipation. This mine has been operated recently by the Director Mining Company, of Vancouver. Work was confined mostly to the extraction of high-grade ore from the hanging-wall vein. The ore-zone occurs in the Ladner slates paralleling a serpentine contact which is traced across the country for some miles. Development of this property has been confined mostly to one level which was driven on a narrow seam, from which some spectacular specimens were obtained from time to time.

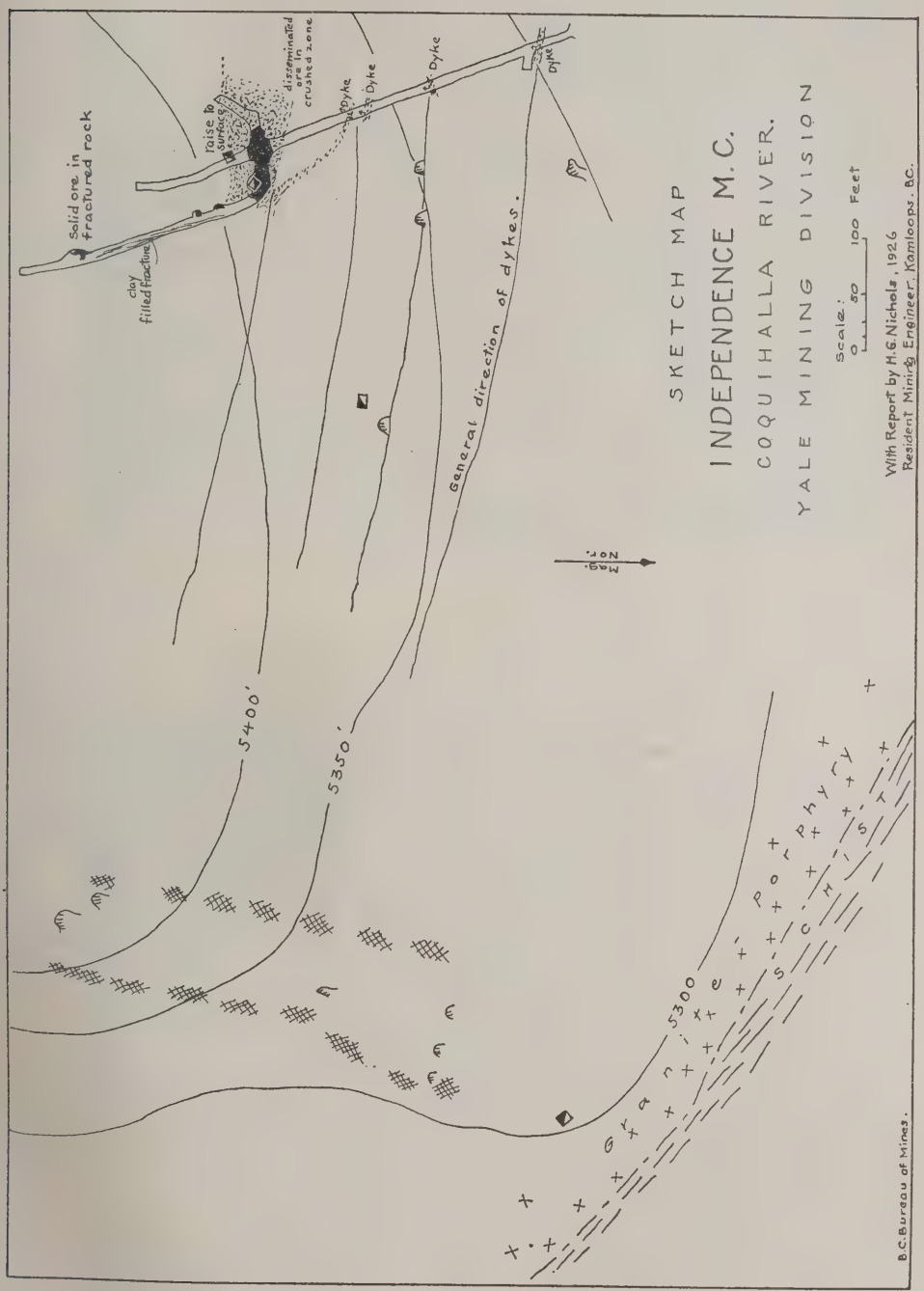
The drift is about 500 feet long; the main ore-shoot, which was stoped up to the surface, being about 60 feet long. This ore-shoot is definitely associated with the intersection of a crossing seam.

High-grade ore was found along the intersection wherever it has been followed. In the foot-wall of this high-grade seam there is an almost parallel body of quartz which carries low values in gold. This quartz-body has been intersected in three crosscuts driven from the main level and a certain amount of drifting has been done upon it, about 100 feet in all. The intersecting seam above referred to should intersect this body of quartz to a depth of about 30 feet below the present workings, and it is to be regretted that no attempt has been made to ascertain whether similar points of enrichment may occur at the intersection.

A tunnel has been driven into the hill for a distance of about 350 feet at a vertical distance of about 200 feet below the main workings, but this tunnel is entirely in the serpentine and no crosscutting has been attempted.

The *Emancipation* is a property that requires development under capable supervision.

Idaho. Recent prospecting has resulted in the discovery of a silicified zone along the serpentine contact. This zone has been exposed in a series of open-cuts over a distance of about 350 feet on the steep hillside flanking the South fork of Ladner creek, some 2 miles from the *Emancipation* workings. The work is insufficient to admit of any definite statement of value to be made, but it is important as proving the continuity of


SKETCH MAP
INDEPENDENCE M.C.
COQUIHALLA RIVER.
YALE MINING DIVISION
Scale: 0 50 100 Feet
With Report by H.G. Nichols, 1926
Resident Mining Engineer, Kamloops, B.C.
B.C. Bureau of Mines.
Solid ore in fractured rock
clay filled fracture
Raise to surface
disseminated and crushed zone
Dyke
General direction of dykes.
N. 37° W.
5400'
5350'
5300'
Granite
Porphyry
Slate

the "gold-belt" which parallels the serpentine contact. Widths up to 7 feet of quartz have been shown in the cuts and free gold has been found. The several claims covering this ground have been consolidated under the name of the *Aurum* group by A. E. Raab, of Hope.

Gold. On this group some spectacular showings of visible gold have been found in the quartz exposed in the bed of Hillsbar creek at an elevation of approximately 2,745 feet above sea-level. This property was described by C. E. Cairnes in the Summary Report for 1923, Part A, of the Geological Survey of Canada, who states: "A series of quartz veins crosses a belt of slates near the contact of an intrusive granodiorite. There is probably a zone of slaty rocks a couple of hundred feet or so in width, following the contact, in which these quartz veins may be expected to occur. The aggregate width of the vein quartz estimated from one section exposed on Hillsbar creek shows a total average width of about 4 feet."

The property is under development by an American syndicate, with E. Strom in charge of operations, and it is understood that a stamp-mill is to be installed. A certain amount of new work has been done since the report above mentioned was made.

Over a distance of 75 feet exposed in the bed of the creek, approximately 15 per cent. is vein quartz; and in one seam, which is 4 feet 6 inches wide, there is 10 inches of quartz carrying visible gold. A great movement of the schists is evident. It is probable that a large proportion of country-rock would have to be crushed in any scheme for the recovery of values.

Midas. W. S. Bradley has located three claims adjoining the *Gold* group on the north, where the same series of gold-bearing quartz veins is exposed in the bed of a small creek tributary to Hillsbar creek. There are three parallel seams of quartz and a zone of slaty rock 35 feet wide, in which the total aggregate of quartz stringers amounts to about 20 per cent. of the whole width.

Pride of Emory. It is understood that difficulties in regard to title to the nickeliferous-pyrrhotite deposit on Emory creek have been overcome, and recent prospecting has improved the outlook in regard to the delimitation of ore having a nickel content higher than the average.

Eureka-Victoria. It is understood that negotiations for the reopening of this old mine are under contemplation. The property, which is situated at an elevation of about 5,000 feet above sea-level in the precipitous mountains lying to the south of Hope, has the distinction of being the first lode mine operated in British Columbia. The production in early years is estimated to have been between $300,000 and $400,000 in high-grade silver ore.

Americanadian Dredging Co. A plant has been installed by this company, with L. A. Thomas in charge of operations, for the purpose of gold and platinum recovery from the Fraser river, about 2 miles above Hillsbar creek. A drag-line with a 32-cubic-foot bucket is being installed to cut a channel at the low point of a bar below the rapids. It is estimated by the operators that they will be able to make twenty trips an hour with this bucket, handling 500 cubic yards of gravel a day.

A considerable amount of capital has been expended on equipment, including a pipe-line and a treatment plant comprising an arrangement of screens, a concentrating-table, and a centrifugal concentrator. The concentrate is to be treated in a Ross mill. There are fourteen men employed.

Siwash Creek.

The Azalea Mining Company, with C. J. Dumbolton in charge of work, has completed a 6-foot road to the site of the company's proposed hydraulic operations on Siwash creek. The project includes the cutting-down of the channel above the 1,000-foot falls in order to allow for working the creek-gravels down to bed-rock for a distance of 2 miles up the stream. Substantial appropriations have been made by the Department of Mines for the assistance of the road-work.

Some good pay-gravel has been found in this creek. The grade is from 3.5 to 4 per cent.; the width of the channel averages from 50 to 75 feet and bed-rock is estimated to be as much as 20 feet below the creek-level in places. There are some big boulders along the upper section.

Peers Creek.

J. Fullbrook has continued his work on the bench material on this creek, tributary to the Coquihalla river, with a view to the commencement of hydraulicking operations.

Siwash Creek, Yale M.D.

Cotton Belt Mines, Ltd., Kamloops M.D.

Little Gem. A group of claims of this name has been located at the head of the East fork of Dewdney creek, just over the summit of the divide from the Tulameen valley. A number of seams of zinc ore have been exposed in open-cuts and a 90-foot tunnel has shown a considerable impregnation of zinc minerals throughout the conglomerate formation. The property is close to the contact of this formation with a diorite stock.

NICOLA MINING DIVISION.

Aberdeen. Operations on this property were suspended and Merritt Mines, Limited, withdrew from the camp in the early part of the year. The work which was done upon this property, and at the *Vimy Ridge* adjoining, was not carried out in the best interests of either property. No further information was obtained in regard to the *Aberdeen* ore-body and the workings were allowed to fill with water after the remaining pillars in the upper levels had been extracted.

At the *Vimy Ridge* the work on the 100-foot level was of an erratic nature and the general direction of the mineralized zone of shearing was lost in the broken ground that was encountered. This property is deserving of more systematic exploration.

Thelma.—This property, which is situated about 12 miles due north of Nicola, has been under option during the past year and it is reported that some encouraging results have been obtained in the course of development.

Star. Work has been continued on this property by Planet Mines, Limited. The shaft has been extended down to a depth of 230 feet on the incline and drifts have been run on the 200-foot level. The vein, which appeared to be rather indefinite on the 130-foot horizon, looks better on this lower level, averaging about 2 feet wide and in places swelling out to 5 feet. It is fairly well mineralized with galena and zinc sulphide, together with some grey copper. Ore taken from these workings has been put on the dump and no shipments have been made.

The property is situated on the shore of Stump lake and is one of a number of prospects in this area which was named by Dawson "Mineral hill."

A great deal of work was done in this locality many years ago and it is unfortunate that most of the workings are filled with water. The veins, carrying ores of lead, gold, zinc, and silver, are not large, and that may have been the reason that operations were abandoned; there is also the fact that at the time the work was done the complex character of the ore presented difficulties of treatment which would not be so serious now.

In general it may be said that properties in this area, characterized by persistent fissuring in a greenstone formation, are hardly big enough to be worked separately, but that the area as a whole justifies exploration.

Azela. Some work was done by J. L. Brown, of Victoria, upon this property, which is situated about 1½ miles east of the highway between Stump lake and Nicola lake, at an elevation of about 3,000 feet. There are two series of well-defined quartz veins, cutting a diabase formation, which range from 6 inches to 4 feet wide. A sample taken from the dump of an old shaft assayed: Gold, 0.014 oz.; silver, 30 oz. to the ton; zinc, 9 per cent.

This shaft was unwatered and was found to extend to a depth of 50 feet. About half-way down the vein is 3 feet 6 inches wide and is well mineralized with lead and zinc sulphide. At the bottom of the shaft the vein narrows to about 12 inches of quartz with very little metallic mineral.

Several open-cuts were made on different outcrops where strong showings of quartz were encountered, but the values obtained on assay were low.

Middlesboro Collieries, Ltd.

The discovery of the extension of the No. 2 seam at a distance of about 1 mile from the old workings has given rise to a considerable improvement in the coal-mining situation in this field at Merritt. The coal of this seam was of a superior quality and there is an assured market for the production, which is increasing.

The company is developing Nos. 3 and 4 mines, which are looking well. A total of 43,474 long tons of coal was produced during the year. One hundred and ten men were employed on the property.

VERNON MINING DIVISION.

Silver Star. Much local interest has been taken in the discoveries of silver-lead ore on Aberdeen mountain, and a Vernon syndicate has acquired several holdings covering the ground on which these occurrences were exposed in the bed of a creek, following a slide of rock. A camp has been built in preparation for the work of prospecting.

The ore occurs in a wide band of metamorphosed calcareous argillites of the Shuswap formation. The rocks of this whole area are greatly deformed, and it appears as though the ore is generally associated with an amphibolite which probably represents an acute stage of metamorphism. No intrusive rock is found on the surface, but the ore is probably related to an underlying intrusive.

The property calls for careful prospecting, and this might be profitably devoted to tracing the direction of the bands of amphibolite on the surface with a view to locating the presence of the intrusive rock and of the main source of mineralization.

Cherry Creek Placer.

Preliminary work in connection with the clearing away of debris, etc., has occupied the whole season and has been hampered by lack of water.

Shuswap River.

F. Hildreth and partner have been prospecting in Cherry range and Silver hills and have located a number of claims covering outcrops of limy argillites, certain beds of which are impregnated with zinc and copper minerals.

Ophir. W. Brent has performed useful work in demonstrating the continuity of the silicified shear-zone which passes through this property on the west side of the North arm of Okanagan lake, 6 miles from Vernon. The zone has been traced for approximately 350 feet and is shown to be from 15 to 20 feet wide, carrying gold and silver values associated with chalcopyrite, pyrite, galena, and zinc-blende. The property was examined by a representative of the Victoria Syndicate, Limited.

Kelly. J. S. Logie, of West Summerland, has acquired this property, which is situated on Trout creek, about 9 miles north of Penticton, on the west side of Okanagan lake. Some high-grade galena and grey-copper ore is found in seams in an area of crushing and shearing in a granitic rock. The prospect is a promising one.

Siwash Creek.

A considerable amount of capital has been spent in the construction of a flume and pipe-line for hydraulicking bench material flanking this creek, about 2 miles above its entry into Okanagan lake. Saskatchewan capital is interested in this venture, which is being superintended by E. I. West.

Mission Creek.

Some placer-work has been carried out on this creek by H. Miller.

Cayoosh Creek Placer-mining, Lillooet M.D.

Louis Creek Placer-mining, Kamloops M.D.

SOUTHERN MINERAL SURVEY DISTRICT (No. 4).

By Philip B. Freeland, Resident Mining Engineer.

INTRODUCTORY.

The Southern Mineral Survey District (No. 4), comprising four Mining Divisions—Grand Forks, Greenwood, Osoyoos, and Similkameen—is situated in the extreme south centre of the Province of British Columbia, and is bounded on the south by the International Boundary-line, on the east by the height of land controlling western-flowing streams, on the north by the water-shed of southern-flowing streams, and on the west by waters flowing east from the Coquihalla range of mountains.

Production figures for 1926 again show an increase which is due chiefly to the Granby Company's operations on Copper mountain, and in a smaller way to the mines on Wallace mountain, Beaverdell, and other silver-lead producers in the Greenwood Mining Division. The uncertain outlook for the price of silver curtailed developments to a great extent on the silver-lead prospects, and until the market becomes stabilized this situation is unlikely to improve except in cases where the ore contains a high lead content. Exploration, although well financed, has either ceased or been curtailed on arsenical-gold prospects on Dominion mountain, near Hedley, on copper-gold deposits at Voigt's camp near Princeton, and on copper-pyrrhotite outcrops near Rock creek, due to unusual winter conditions. Work on these discoveries will probably be resumed in the spring and the outlook for one producing mine at least appears to be bright.

Mining in the Grand Forks Mining Division was quieter than usual in spite of the fact that there are some likely prospects of silver-lead and pyrrhotite-gold close to railway transportation. One of the worst features of some undeveloped prospects in this Division is that the owners, in the past, have put a price on their prospects beyond all reason when considering the tonnage developed or indicated, and until this is remedied there is but a small chance that capital will become interested. There are other owners that are willing to give plenty of time for exploration and are asking a price in keeping with the possibilities of their prospects.

The platinum-gold placer-gravels of the Tulameen and Similkameen rivers received a considerable amount of attention during the season and much money was spent in abortive operations. Apparently most of the shallow gravel-diggings have been worked out, and only the benches, deeper channels, and areas where a heavy flow of water prohibited former operations remain for exploration. Insufficient testing of the ground before installing machinery has led to failure and a general belief that there is no pay-gravel in this area. It is safe to assert that none of these operations have proved anything except that the pay-gravels lie in channels and not generally throughout the alluvial material. Prospecting by means of shafts in water-soaked benches has also proved to be disappointing, because it is a very difficult matter to install a pump that will control an unknown and variable flow of water. Churn-drills are therefore to be recommended, in spite of the fact that some of the values may be lost. Future speculators will do well to demand that proper investigations be made before installing machinery. Values to the cubic yard of gravel in benches cannot be safely estimated from pannings taken from shallow pits not going down to bed-rock.

The following table shows the total tonnage and contents produced in No. 4 District by Divisions for 1926 and the district totals for 1925:—

Division.	Ore.	Gold.	Silver.	Copper.	Lead.
	Tons.	Oz.	Oz.	Lb.	Lb.
Grand Forks	11	20	16	.....	.....
Greenwood	3,016	166	408,562	35,342	180,495
Osoyoos	50,358	16,280	11,353	.....	.....
Similkameen	669,356	3,988	141,236	17,752,253	6,598
Totals, 1926	722,741	20,454	561,167	17,787,595	187,093
Totals, 1925	175,719	19,721	504,713	3,464,891	278,107

Division.	Zinc.	Arsenic.	Coal.	Limestone.	Bentonite.
	Lb.	Tons.	Tons. (2,240 lb.).	Tons.	Tons.
Grand Forks	.....	.....	.....	34,916	....
Greenwood	1,339	.....	.....	.....	....
Osoyoos	.....	509	426	.....	....
Similkameen	5,525	.....	135,496	.....	30
Totals, 1926	6,864	509	135,922	34,916	30
Totals, 1925	.....	1,119	131,807	35,150	....

A total of 518,901 common brick valued at $6,787.18 was produced in the Grand Forks Mining Division.

Prospecting.

From time to time mention has been made in the annual report of this district of likely areas for prospecting, and depending generally on the demand for certain metals or non-metals, as the case might be. A résumé of these areas, under Mining Divisions for convenience' sake, together with the more important minerals to be looked for, is given here:—

Grand Forks Mining Division.—In the Paulson section gold, silver, and lead are found with occurrences of platinum associated with pyrite in the Burnt basin. This is an old mining district, but is worthy of more intense prospecting and perhaps close examination of some of the semi-developed mines.

In the Cascade area the dunite rocks contain chromite which has been only partially developed.

In the vicinity of the Granby river (North fork of Kettle river) there are several prospects of silver, lead, zinc, and copper, whilst at Franklin camp the gold and copper ores command attention, especially in the pyroxenite rocks, which contain a good percentage of platinum where the copper sulphides are massive.

At the headwaters of the Granby river, named Lightning Peak camp, the silver-lead deposits are worthy of development.

A belt of serpentinized dunite rocks occurs at intervals between Grand Forks and Phoenix, and a certain amount of platinum is associated with the copper ores found near the contact of these rocks and the sedimentaries.

Greenwood Mining Division.—Further intensive prospecting and development of some of the old silver-lead mines near Greenwood is warranted, as well as a closer study of the copper occurrences at Copper camp beyond Deadwood.

Between Rock creek and Bridesville there are silver-lead deposits which have merit, and if the market price justifies it the chromite prospects in the same belt might be developed successfully.

The silver-lead deposits on Wallace mountain at Beaverdell need no advertising.

The country north and east, lying between the Kettle river and the Westkettle river, is worthy of closer study, especially along the contacts of the quartz monzonite and in the quartz diorite; also the gold-bearing arsenopyrite on Horseshoe mountain.

Osoyoos Mining Division.—The belt of schistose rocks predominating north of Osoyoos lake and between the Okanagan and Similkameen rivers contains many gold-bearing quartz veins which might be prospected.

The whole section of country lying within the curve of the Similkameen river between Princeton and Similkameen Station and north of the International Boundary has not been thoroughly prospected. The geology of the part of the country reported upon by R. A. Daly, in his 49th parallel survey, is sufficiently interesting to be followed up by closer inspection, especially on the contacts of the sedimentaries and igneous rocks. Native arsenic, tungsten, and strontianite have been found in the vicinity of the Ashnola river, which drains this part of the country to the north

Similkameen Mining Division.—A continuation of the last-named area extends west as far as the Coquihalla and has been reported upon in sections by C. E. Cairnes, of the Geological Survey, Summary Report, 1922, Part A. Prospects of coal, silver-lead, and zinc have been found east and south of the Similkameen and Pasayton rivers. The belt of pyroxenite and peridotite rocks extends from Olivine mountain on the Tulameen river in a south-easterly direction to the International Boundary, and along the contact of these rocks in the weathered zones good prospects of platinum have been panned. Transportation facilities throughout the district are good and a great assistance to prospecting.

Transportation Features.

The main trunk motor-road passes through Cascade, Grand Forks, Greenwood, Midway, Rock Creek, Bridesville, Osoyoos, Keremeos, Hedley, Princeton, Tulameen, and Merritt. Main branch roads fork from Cascade and traverse Christina lake and up McRae creek to Paulson and the old *Inland Empire* mine 4 miles beyond. A road from Grand Forks traverses the Granby river to Franklin camp, a distance of 48 miles. Another road follows the Kettle river from Rock Creek to Christian Valley, with a branch up the Westkettle to Beaverdell and Carmi. The Camp McKinney road leaves the main thoroughfare between the Rock Creek crossings and goes direct to Oliver. From 2 miles beyond Osoyoos a road follows Osoyoos lake to Oliver and Penticton, with a branch from Fairview, which joins the Penticton road at Dog lake. There is another road from Penticton to Keremeos, with a branch running up to the *Nickel Plate* mine and another branch to White lake. Four roads branch from Princeton; one follows the Similkameen river for 12 miles, another goes up 1-Mile creek to Merritt, another up 5-Mile creek to Osprey lake, and the fourth follows Summers creek to Missoula lake. From Tulameen a new road has been built up the Tulameen river to Summit camp, a distance of 21 miles.

The main trails traverse the country between the Edgewood–Vernon road, Lightning Peak camp, and Rendell creek. Another trail leaves Carmi and crosses the Kettle River divide into Penticton. Commencing at a point about 8 miles above Keremeos, an old wagon-road and trail follows the Ashnola river to the International Boundary-line. The Dewdney trail leaves the wagon-road 9 miles south of Princeton and crosses the summit to Hope. Numerous trails branch from the wagon-roads and main trails and give access to nearly every part of the district. The West Kootenay Power and Light Company's line passes through the district from Cascade to Princeton and affords cheap power for mine operation.

Road and Trail Construction.

Many operating companies, syndicates, and prospectors in the district have received assistance from the Mines Department towards construction of roads, trails, and bridges leading to their mines and prospects, providing such mines and prospects warranted the expenditure. A total of about $14,000 was spent by the Mines Department for this work. The request from different organizations to keep the roads open with snow-ploughs for motor traffic during the winter months is a new one, which will be costly if granted to every operating concern.

Many thanks are due to all mine operators and prospectors whose claims were visited, for their kindness and hospitality.

List of Reports on District.

In the following table a list of the more important reports on parts of this district is given:—

Name of Author.	Publication.	Description.	Year.	Page.
R. W. Brock	Geological Survey of Canada	Boundary District	1901	49A
R. W. Brock	Geological Survey of Canada	Boundary District	1902–3	92A
R. A. A. Johnston	Geological Survey of Canada	Aspen Grove	1904	74A
Chas. Camsell	Geological Survey of Canada	Princeton	1907	.....
Chas. Camsell	Geological Survey of Canada	Hedley	1910	.....
Chas. Camsell	Geological Survey of Canada	Summary Report	1912	211
O. E. LeRoy	Geological Survey of Canada	Phoenix	1912	.....
R. A. Daly	Geological Survey of Canada	49th Parallel	1912	2 vols.
O. E. LeRoy	Geological Survey of Canada	Mother Lode	1913	.....
J. D. Galloway	Minister of Mines' Report	.....	1913	140–171
J. D. Galloway	Minister of Mines' Report	.....	1914	336–357
Leopold Reinecke	Geological Survey of Canada	Beaverdell	1915	.....
D. B. Dowling	Geological Survey of Canada	Coal	1915	255–261
C. W. Drysdale	Geological Survey of Canada	Franklin Camp	1915	.....
J. D. Galloway	Minister of Mines' Report	.....	1915	182–202
W. M. Brewer	Minister of Mines' Report	.....	1915	205
W. M. Brewer	Minister of Mines' Report	.....	1915	235
P. B. Freeland	Minister of Mines' Report	.....	1917	198
P. B. Freeland	Minister of Mines' Report	.....	1918	201
P. B. Freeland	Minister of Mines' Report	.....	1919	162
P. B. Freeland	Minister of Mines' Report	.....	1920	152
Munition Resources Com., Mines Branch, Ottawa	.....	Platinum	1920	134, 147, 161
P. B. Freeland	Minister of Mines' Report	.....	1921	176
P. B. Freeland	Minister of Mines' Report	.....	1922	160
C. E. Cairnes	Geological Survey of Canada	Summary Report, Part A.	1922	88
Eugene Poitevin	Geological Survey of Canada	Summary Report, Part A.	1923	84
C. E. Cairnes	Geological Survey of Canada	Summary Report, Part A.	1923	46
P. B. Freeland	Minister of Mines' Report	.....	1923	176
P. B. Freeland	Minister of Mines' Report	.....	1924	162
P. B. Freeland	Minister of Mines' Report	.....	1925	190

GRAND FORKS MINING DIVISION.

Granby River Section (North Fork of the Kettle River).

Rock Candy.—The Consolidated Mining and Smelting Company, owners of this property, replaced the aerial-tram cable from the mine to the mill during the summer. No fluorite was mined.

Strawberry. This property is situated about 11 miles up the Granby river, on the west side adjoining the wagon-road and within a mile of the railway. Local interest endeavoured to unwater the old shaft, but owing to the difficulty of purchasing locally the type of pump required for this work the attempt was abandoned until 1927.

Former reports mention that a considerable amount of development-work was done, including open-cuts and two shafts, one about 40 feet and another over 100 feet in depth, with drifts from the deeper workings. On the dump there is a large amount of weathered and disintegrated pyrrhotite and pyrite, which came from the deepest shaft. A sample of this rock assayed: Gold, 0.08 oz.; silver, 2.5 oz. to the ton; copper, 1.34 per cent. Another sample from a shallow open-cut above the shaft assayed: Gold, 0.14 oz.; silver, 0.60 oz. to the ton. There is a great deal of surface mineralization on other parts of the claim which carries values in gold and silver. The ore occurs in shear-zones in andesite, which is intruded by granodiorite. The ore-minerals are pyrite, pyrrhotite, and chalcopyrite in a gangue of silica. The close proximity of the claim to transportation justifies further exploration.

Black Diamond. This group of claims includes the *Black Diamond*, *Orville*, *Paris City*, *Golden Cross*, *Gilt Edge*, and *Imperial*, and is situated approximately 5 miles up Blue-joint creek, which flows into the Granby river near Mile 32. The claims are owned by Elmer Rice, Chas. Hansen, *et al.*, of Grand Forks. Development-work consisting of

open-cuts, stripping, and shallow shafts uncovered large, low-grade segregations of pyrite, chalcopyrite, and bornite, with malachite in the surface fractures. The gangue is silica. The country-rock in which the mineralization occurs is a shonkinite-pyroxenite and similar to the rocks of this type described by Chas. W. Drysdale in his Memoir No. 56, G.S.C., on the geology of Franklin camp. A general sample taken from one of the cuts assayed no gold or silver and 0.7 per cent. copper. Another sample taken by the owners carried about 4 per cent. in copper. No platinum was found in any of the samples. Until more exploratory work is done it is impossible to estimate the value of the property, but the extent of the mineral-zones are such that at least another year's assessment-work should be done before condemning the claims. The presence of platinum may be looked for in these rocks.

Union. Louis Johnson and Pat McGinnis did some development-work on the surface and drove south from the face of No. 2 tunnel, crosscutting the vein for 10 feet. A sample from this cut assayed: Gold, 0.20 oz.; silver, 5.6 oz. to the ton. Some well-mineralized rock was uncovered on the surface, but no samples have been assayed.

Lightning Peak Section.

This section was not visited this season, but reports from the lessees of the *Lightning Peak* group of claims state that the prospects are looking promising and that some silver-lead ore is being rawhided out to the smelter for treatment.

On other claims in the vicinity nothing but assessment-work has been reported. The Government cut out and partially graded a snow-road over the new survey, which enables those interested to rawhide their ore to the main Edgewood–Vernon wagon-road and thence by truck or wagon to Edgewood, on the Arrow lakes.

Paulson Section.

Enterprise. This group, consisting of the *Enterprise*, *King Peter*, *Lucky Peter*, *Corbin*, *Norway-Star*, *Huckleberry*, and *Eurella* claims, situate about 4 miles north-east of Paulson and owned by Ed. Terzick, has been leased and bonded by Joe Grafton, Geo. Elms, and Chas. Hodginson, of Rossland, under the management of Joe Grafton. Development-work for the year consists of one 10-foot open-cut, with a 12-foot tunnel from the cut. A 15-foot tunnel has also been driven at an elevation of 18 feet below the collar of the old 40-foot shaft. During the winter of 1926–27 a car-load of silver-lead-zinc ore was shipped to the siding at Paulson. A half-mile sleigh-road was built to connect the mine-workings with the old wagon-road. The ore-bodies occur as lenses in the schist close to a granite-contact. An intrusive porphyry dyke has cut and displaced the ore in the vicinity of the shaft where most of the work has been done. It is probable that more ore will be found on the north-east side of this dyke. The ore-minerals are galena, zinc-blende, pyrite, and chalcopyrite in a gangue of silica. A general sample of the best ore on the dump assayed: Gold, trace; silver, 10 oz. to the ton; lead, 16 per cent.; zinc, 20 per cent.; copper, 3 per cent.

Molly Gibson. This claim, situated about 4 miles in a south-westerly direction from Paulson, was not examined during the year, but reports from those working the claim state that some high-grade ore was found in the vicinity of the old upper workings. The owners are the Molly Gibson Mining Company, of Rossland. This property was reported on in the 1918 Annual Report.

Tunnel Fraction. This group, consisting of the *Nero*, *All Fractional*, *Lettie*, *Tunnel Fraction*, *Lina*, and *Rosa* claims, is located at Paulson, adjoining the railway, and owned by Fred Kettner, of Paulson. These claims have been developed for many years by the owner and others who became interested. Development consists of numerous shafts near and on the crest of the hill and many open-cuts and tunnels between an elevation of 3,800 and 4,820 feet, most of which were either full of water or caved in, so that it was impossible to inspect them. The upper work has been done chiefly in diorite, in which certain fractures and narrow lenses have been mineralized with pyrite and occasional specks of chalcopyrite, with an insufficient general mineralization to warrant further work. On and near the contact of the diorite and syenite there are other mineralized fractures filled with pyrite and marcasite, much of which has been oxidized. Occasional specks and films of chalcopyrite and malachite are also found, but not in sufficient quantities to make the area attractive.

At an elevation of 4,375 feet the intrusion of a porphyry dyke in a north-westerly direction has been responsible for the general disturbance of its contact rocks. An open-cut 20 feet long has been driven along this contact in an oxidized zone 6 feet wide containing some quartz remnants and segregations of disseminated pyrite. No samples were taken of this material, but it is understood that up to $5 in gold to the ton has been recovered.

A great deal of stripping, a shaft of unknown depth, and an open-cut 18 feet long constitute the development of what is supposed to be a ledge near the top of the hill. As it was impossible to examine the shaft and the stripping was filled in, it is difficult to express an opinion; but judging by the crushed condition of the rocks in the open-cut and collar of the shaft and beyond, there seems to be little doubt that the work has been done on a fault or shear-zone containing small amounts of pyrite.

On the *Berry* claim, at an elevation of about 4,275 feet, an open-cut 18 feet long has been driven on a quartz vein varying from 12 to 14 inches in width and containing isolated segregations and veinlets of pyrite. According to the owner, free gold has been found in the oxidized quartz. A sample of this pyrite taken from the dump assayed: Gold, 0.50 oz.; silver, 0.30 oz. to the ton. Other open-cuts on the same lead and on offshoots from this lead proved its continuance in a south-westerly direction, but as the workings were caved in to a great extent it was not possible to examine them thoroughly. This appears to be the only discovery examined that justifies further work being done upon it.

Two lower crosscuts have been commenced at different elevations and at different times near the wagon-road with the idea of tapping the supposed ore-bodies found between an elevation of 400 and 1,000 feet above. This is too great a lift to take when so little is known about these ore-bodies, and all future crosscutting-work should be confined to 100 feet in depth, at most, below the zone desired to be developed. There is an opportunity to drift on the lead found on the *Berry* claim, and this is undoubtedly the best place to do any work in the future.

Fife Quarries.—The fife quarries shipped 34,662 tons of limestone to the Trail smelter during the year.

GREENWOOD MINING DIVISION.

Wallace Mountain Section.

Beaver.

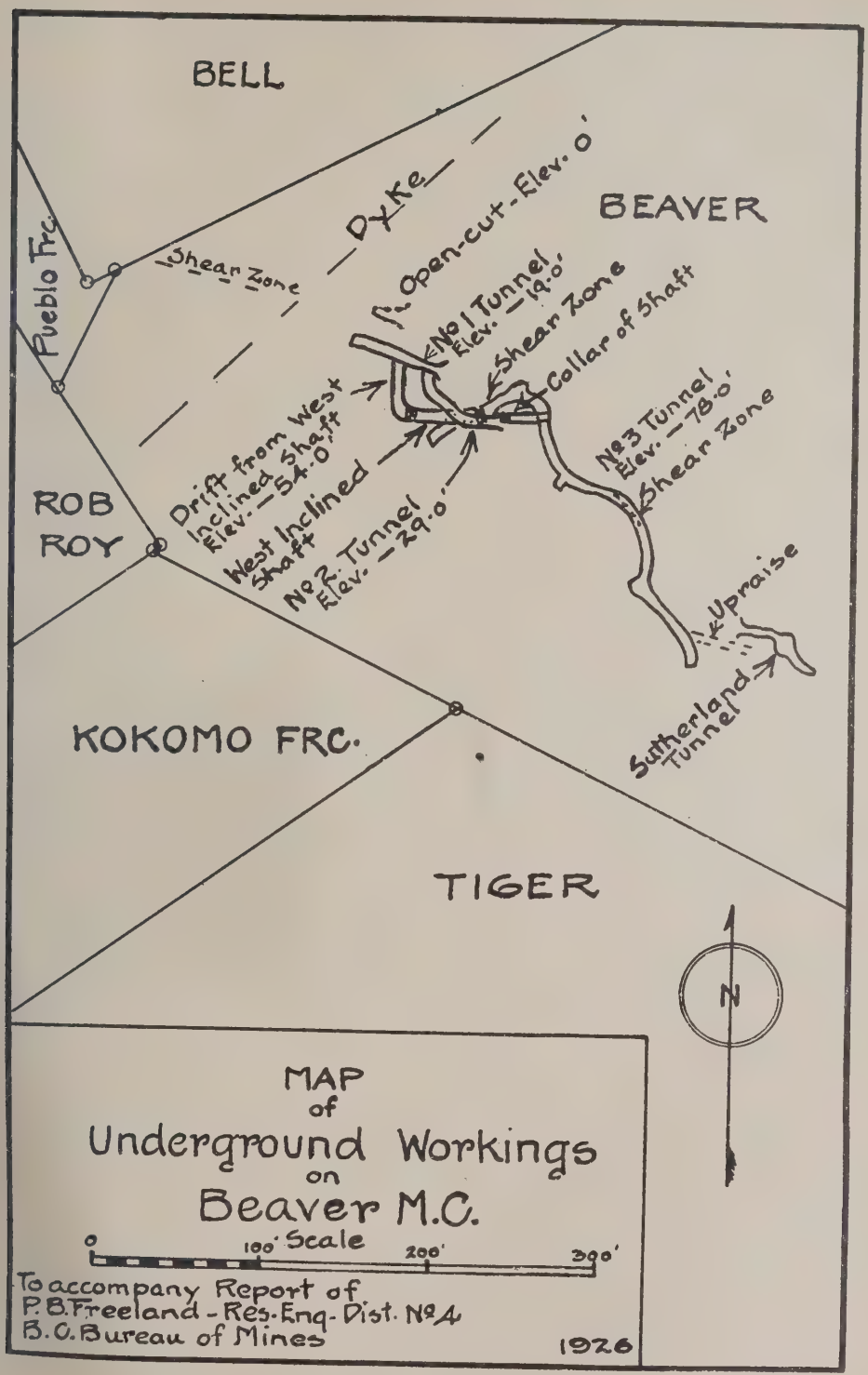
This claim, owned by the Hallet estate *et al.*, of Greenwood, and bonded by the Beaver Silver Mines, Limited, adjoins the *Bell*, *Rob Roy*, and *Pueblo Fraction* on Wallace mountain, 4 miles distant from Beaverdell. The property has been equipped with one Ingersoll-Rand compressor with a capacity of 174 cubic feet, one 25-horse-power John Deere gas-engine, one Fairbanks-Morse 6-horse-power, 450-r.p.m. hoist, an ore-sorting shed, bunkers, cable and buckets, and a complete blacksmith's outfit. All the machinery is well housed. The camp consists of an office, bunk-house, cook-house, etc., to accommodate twelve men.

Development-work consists of: Drifting, 557 feet; upraising, 68 feet; west inclined shaft (30°), 53.5 feet; and east inclined shaft (68°), 60 feet (*see* map). In the development of the mine the ore was stripped on the surface and followed down until it was displaced by faulting or the miners were driven out by water.

The lowest tunnel, No. 3 (*see* map), which strikes in a south-easterly direction, crossed the ravine and en route encountered a faulted shear-zone. An upraise from this level also cut the shear-zone under the Sutherland tunnel. In the No. 3 tunnel shear-zone some good ore was mined, although a large part of the ore was low grade. High-grade ore was also encountered in the drag of the fault on the No. 3 level. A test drill-hole 8 feet long tapped what was considered to be high-grade ore in the face of the first cut to the south from No. 3 tunnel. In the crosscut and drift to the west from the shaft on No. 3 level some good ore was mined until a strong flow of water made underhand stoping impracticable.

In the upper workings most of the available ore has been mined. There is still about 150 feet of unexplored ground to the west, between the main workings and the boundary-line of the claim. A considerable amount of stripping and trenching has been done on the south-east side of the claim and some indications of ore found.

The shear-zones containing the valuable minerals have been mined up to the present in the quartz-diorite rocks. The contact of the Wallace series of rocks, which are made up of lavas, volcanic tuffs, etc., and the quartz diorite, lies along the east side of the *Beaver* claim. Up to


BELL
BEAVER
ROB ROY
KOKOMO FRC.
TIGER
Pueblo Frc.
Shear Zone
Dyke
Open-cut - Elev. 0'
No 1 Tunnel Elev. — 19.0'
Shear Zone
Collar of Shaft
No 3 Tunnel Elev. — 78.0'
Shear Zone
Drift from West Inclined Shaft Elev. — 54.0'
West Inclined Shaft
No 2 Tunnel Elev. — 29.0'
Upraise
Sutherland Tunnel
N
MAP of Underground Workings on Beaver M.C.
0 100' Scale 200' 300'
To accompany Report of P. B. Freeland - Res. Eng. Dist. No 4 B. C. Bureau of Mines
1926

the present no high-grade minerals in sufficient quantities have been found in the Wallace formation. It seems probable that the intrusive quartz diorite will underlie the older Wallace formation to a certain extent and the shear-zones containing ore may be looked for up to that contact and perhaps for a short distance beyond.

The ore-minerals are galena, zinc-blende, argentite, free silver, pyrite, and occasionally other silver sulphides. The main faults encountered in the ravine strike in a northerly and southerly direction and dip generally to the west. The intermediate faults and minor slips have no special strike or dip and have to be considered separately.

Forty-seven tons of ore, containing gold, silver, lead, and zinc, was shipped to the Trail smelter.

Having found high-grade ore in the drag of one of the faults on the No. 3 level and also a high-grade sludge in a test drill-hole on the same level, and as there is a block of ground to the west of No. 3 tunnel that appears to be less disturbed than usual, the company is considering further development-work in the spring of 1927.

Tiger. This claim adjoins the *Beaver* on the south-west and has been worked throughout the greater part of the year by the Tiger Mining Company Syndicate, of Naramata. A considerable amount of stripping, sinking, and drifting was done near the surface, but up to the present time very little success has been obtained. The shear-zones so far discovered generally contained high-grade ore, but were badly faulted or pinched, which prohibited successful operation. The quartz-diorite rocks cover the greater part of this claim, and there appears to be the same chance of finding high-grade shoots of ore on the *Tiger* that can be profitably worked as on other claims on Wallace mountain.

Highland Chief. This claim was worked by Highland Chief Mining Company, Penticton, under the management of Mark Smith, of Beaverdell. Numerous open-cuts and short tunnels were driven on and near the contact of the quartz diorite and Wallace rocks. The ore found consisted of galena, zinc-blende, pyrite, arsenopyrite, chalcopyrite, and occasional films of native silver in the rock fractures. The ore-bodies resemble and may be classed as stocks (described by L. Reinecke, Memoir 79, Geological Survey), which generally occur in the Wallace group of rocks. Other stringers measuring from 2 to 4 inches in width and containing some high-grade ore were found; but owing to the extremely broken nature of the ground on the contact it was found impracticable to work them at present. It seems advisable to confine all future operations to the mineral-zones that occur in the quartz diorite and to leave the stocks or scattered lower-grade ores until sufficient capital is available to exploit and perhaps concentrate them. Work on this claim has stopped temporarily. A picked sample from the blacksmith's tunnel ore assayed: Gold, 0.02 oz.; silver, 40 oz. to the ton; lead, 12 per cent.; zinc, 15 per cent.

Revenge, Sunset Fraction, and Bell Fraction. This group of claims, adjoining the north-west corner of the *Bell*, was leased and bonded by the Crysler Mining Syndicate, of Penticton. A Clayton 55-horse-power compressor of 260 r.p.m. and a Canadian Ingersoll-Rand 10- by 10-inch gas-engine were installed and sleeping-quarters for ten men erected. Practically all the development was done on the *Revenge* claim, which has been worked from time to time during past years. No. 2 tunnel was driven ahead and a few tons of ore extracted.

The old water-tunnel was also extended with the idea of crosscutting the shear-zone found in No. 2. This was not accomplished. The barometric difference in elevation between No. 2 and No. 3 tunnels is 144 feet, which is generally considered to be too great a lift to take on Wallace mountain. The reason for this is that, owing to the nature of the faults, unless closely followed, it is quite within the bounds of possibility to pass within a few feet of a shear-zone which has been displaced. If the crosscut tunnel is only a short distance below the shear-zone being sought it is an easy and inexpensive matter to put in an upraise. The reverse is the case when a tunnel is driven at a great depth. A small shipment of silver-lead ore was made to the smelter.

Bell. This mine was operated steadily throughout the year by Dunc. McIntosh and Henry Lee, of Beaverdell. A new Ruston 53-horse-power Diesel engine and a 12- by 10-inch Ingersoll-Rand compressor were installed to replace the old plant. A total of about 1,200 feet of development-work was done, including drifts, crosscuts, and upraises; 1,002 tons of silver-lead ore was shipped to the Trail smelter.

Sally Mines. The Federal Mining and Smelting Company dropped its option on the *Sally* group of claims early in the year and operations were carried on by the Sally Mines, Limited, for 10½ months during 1926. The following development-work was done: Drifting, 1,796 feet; crosscutting, 1,251 feet; upraising, 540 feet; and sinking, 30 feet. A good deal of work was done on the lowest tunnel at an elevation of approximately 700 feet below the crest of the hill. Six machine-drills were in constant operation and an average crew of twenty-four men maintained. A total of 1,046 tons of silver-lead-zinc ore was shipped to the smelter, out of which about 700 tons was low-grade or second-class ore.

Wellington. This claim was operated by the Wellington Syndicate, of Greenwood. Development-work for the year consisted of: Drifting on No. 2 tunnel, 75 feet; drifting on No. 3 tunnel, 574 feet; sinking from No. 2 tunnel, 33 feet; and upraising from No. 3 tunnel to bottom of No. 2 shaft, 32 feet. The difference in elevation between No. 2 and No. 3 level is 65 feet and from No. 2 to No. 1 level is 52 feet. The following buildings were erected: Bunk-house, 26 by 18 feet; compressor-house and blacksmith-shop, 16 by 49 feet; ore-bin at mine, 16 by 20 feet; and ore-bin at railway-track, 16 by 20 feet. A new 30-horse-power Ruston-Hornsby oil-engine and a 9- by 8-inch Ingersoll-Rand compressor were installed. A total of 217 dry tons of silver-lead-zinc ore was shipped to the smelter.

Operations on the *Wellington* claim are being carried on at an elevation of about 750 feet below the crest of the hill, which constitutes the lowest high-grade minable ore-bodies found up to the present on Wallace mountain. The ores differ from those found at higher elevations, in that pyrargyrite is almost entirely absent, while a larger proportion of tetrahedrite is noticeable in the shear-zones. The grade of ore does not deteriorate on this account. High-grade ore still persists on the floor of the lowest level and at a later date another lift will be taken.

Bounty. This claim had a considerable amount of development-work done upon it under bond by the Federal Mining and Smelting Company in the winter of 1925–26. Following the cessation of work by this company, the claim was leased by A. McPhee, of Beaverdell, and a narrow shear-zone which had been crosscut (130 feet below the surface) by the Federal Company was opened up and partially stoped for 90 feet in length.

The ore in the shear-zone varies from 1 to 8 inches in width and contains the usual minerals found on Wallace mountain. Some of the machinery, including the compressor and engine, was purchased and moved from the *Bounty Fraction* and is being used on the *Bounty*.

Bounty Fraction and Duncan. In 1925 these claims were worked by the Beaverdell Mines, Limited, from February 1st until September. Later the Beaverdell Mines Syndicate took over the options and continued development. This syndicate was shortly afterwards incorporated under the name of the Penticton Mining Company, Limited. Development-work was continued until the end of June, 1926, and as no paying ore-bodies were discovered all work stopped and the options were dropped. An approximate total of 2,500 feet of drifting and crosscutting was done, chiefly on the *Bounty Fraction*.

Rambler Fraction and Standard Fraction. These claims were under lease to the Beaverdell Mines Syndicate for a short period in 1926 and later to private individuals of Beaverdell. On the *Rambler* the lower crosscut has been extended and a drift commenced on a fault to the south by G. M. Barrett and associates, of Beaverdell. On the *Standard Fraction* a small amount of work was done on a fault at the end of the main lower drift and a few sacks of ore extracted.

Black Diamond. The option taken on this claim by a syndicate of Penticton men was dropped on account of a shortage of funds, necessary to continue the lower crosscut tunnel to what was considered its objective, or the downward extension of the slightly mineralized zone found above. The shear-zones found on the adjoining *Standard Fraction* strike across the *Black Diamond* ahead of the crosscut tunnel, and if these zones persist, although there is no surface development to show their continuance, further work may be justified.

Gold Drop Fraction, Ford Fraction No. 1, and Ford Fraction No. 2. These claims, mentioned in the Annual Report for 1925, were developed by the Kettle River Mining Company, of Penticton, during 1926. At an elevation of 4,820 feet (barometric) a shaft was sunk many years ago on an oxidized gossan. Later a tunnel 40 feet long was driven about 70 feet lower in elevation and a winze 5 feet deep was sunk at the end of the level. A porphyry dyke of unknown width strikes across the face of this tunnel and cuts off the mineralized zone between the upper shaft and tunnel. The ore varies from

1 to 6 inches in width and is composed of pyrite, chalcopyrite, and what appears to be tetrahedrite, although the low values in the ore rather contradict the presence of the latter mineral. A sample of sorted ore from this tunnel assayed: Gold, 1.50 oz.; silver, 11 oz. to the ton.

Numerous other open-cuts extend down the hill on this mineralized zone to an elevation of 4,640 feet (barometric), where a lower tunnel has been driven by the present company a distance of about 175 feet on a lead 4 feet in width. The ore in this lead is mostly pyrite in a gangue of quartz and crushed country-rock (quartz diorite), with occasional specks of galena and zinc-blende. The pyrite is not persistent throughout the length of the lead, but occurs in segregations widely separated. A sample of nearly solid pyrite from this tunnel assayed: Gold, 1.60 oz.; silver, 3 oz. to the ton.

The management states that since the property was examined on May 27th a short crosscut has been driven on the left side of the lower tunnel and another lead from 2 to 2½ feet was encountered, having free walls and an abundance of water flowing through it. There were no sulphide minerals present in this vein, but the gangue appeared to be similar to that in the shear-zones of the *Bell* and *Sally* mines on Wallace mountain and therefore considered to be attractive.

Crystal Mountain.

An examination of this area was made with Frank Carey, of Rock Creek, who is one of the owners of a group of claims that were staked and explored in 1925. This section lies beyond Crystal creek, approximately 2 miles east of Wallace mountain, and can be reached by wagon-road as far as the Harrison ranch on Beaver creek, and from thence by trail up and across Beaver creek to Crystal butte, a total distance from Beaverdell of about 9 miles. The geology of the area, mapped by L. Reinecke, of the Geological Survey, shows that Crystal butte consists of unaltered lava-flows and porphyry dykes surrounded on all except the west side by the Wallace group of rocks (lavas, tuffs, etc.). A tongue of quartz diorite projects from the main mass along the west side of the butte. All the claims examined were located in the Wallace rocks and the ore-bodies are similar in type to the stocks described by Reinecke.

Little Joe. This claim, owned by W. Lawrence and Joe Ker, of Rock Creek, is situated on the south-east and close to Crystal butte. Development-work consists of a shaft about 9 feet deep and a tunnel 35 feet long and 15 feet lower in elevation. The bottom of the shaft could not be examined on account of water, but at the collar there is a vein of quartz about 1 foot wide containing galena, sphalerite, pyrite, and arsenopyrite that assayed a trace in gold, 3.6 oz. in silver to the ton, and 12 per cent. lead. The tunnel was driven in a zone of sheared and faulted volcanic tuffs. Displaced lenses and veins of quartz occurred throughout this zone. Surface mineralization can be traced for about 100 feet up the hill from the tunnel. Two ore-houses, 10 by 10 feet, have been built.

Rainbow. This claim is owned by Frank Carey, Herb. Nicholson, and others, of Rock Creek, and is situated due east of Crystal butte. Former development-work consists of three shafts, 12 feet, 6 feet, and 10 feet deep respectively, on a quartz vein averaging 14 inches in width. Each shaft is about 60 feet apart. The ore-minerals are chiefly pyrite with occasional segregations of galena and chalcopyrite. A sample from the deepest shaft assayed 0.04 oz. in gold, 8.5 oz. in silver to the ton, and 2 per cent. lead. This vein occurs in a stratified tuff and is typical of the "stock" variety of ore-deposit.

Sullivan, Rock Creek, Little Casie. These claims are situated to the east and on the southern toe of Crystal butte and cover a general mineralized area in the volcanic tuffs. Development-work consists of trenching, open-cuts, and shallow shafts on quartz veins and oxidized fractures containing pyrite, arsenopyrite, galena, and zinc-blende. Work up to the present time has shown the mineralized bodies to be insufficiently large to warrant building a reduction plant and not of a high enough grade to ship direct to the smelter. The locality is interesting geologically and warrants further prospecting, especially along the quartz-diorite contact.

Rock Creek.

Three attempts were made to work placer-ground on Rock creek without much success, for different reasons. F. J. Smith acquired some ground below the second road crossing and dug a 200-foot ditch at the entrance to the canyon in an endeavour to reach bed-rock in the basin

above, which had not been tested before. Owing to depth of gravel he found it impossible to carry out this work and after obtaining a few small nuggets of gold abandoned the lease.

T. E. Muir and J. S. Horagan, of Vancouver, sub-leased some ground on Rock creek from James Grant, of Bridesville, near the junction of Rock creek and Jolly Jack creek, and also half a mile below the old wagon-road crossing of Rock creek. Before the work had got well under way, according to the sub-leasers, certain disagreements with J. Grant caused them to throw up their option and quit work. The difficulty of obtaining capital for these ventures should not be forgotten by the owners of leases who cannot afford to work them themselves, and every consideration, instead of hindrance, should be given those who are willing to spend money on development. The intention of the sub-leasers was to hydraulic the benches on the upper lease near Jolly Jack creek, and on the lower one to unwater the old shaft sunk away from the creek in the early days, and retimber a tunnel which was driven in rock from the shaft under the creek. The former operators are supposed to have drilled up through bed-rock from this tunnel and have been flooded out by water. It is estimated that modern pumps could handle this water and that the virgin bed-rock could be worked. Both these leases appear to have merit and under proper conditions might be profitably worked. In any case there is an excellent opportunity to test bed-rock on the lower lease.

Le Roi and War Eagle.

These claims, situated about 1½ miles north of the main wagon-road and about half a mile east of the Camp McKinney road between the Rock Creek crossings, are owned by James Copeland *et al.*, *of* Rock Creek. A lease and bond was taken in the late autumn by the Consolidated Mining and Smelting Company, of Trail, and a diamond-drill installed. Owing to the early hard frosts and consequent freezing of the pipe-line, work was stopped temporarily.

Development-work, consisting of three shafts, 60 feet, 50 feet, and 12 feet deep respectively, as well as numerous open-cuts and stripping, has been done in an area of 100 feet square. J. Copeland and partners sunk the 50-foot shaft when the claims were first staked many years ago. The deepest shaft was sunk shortly afterwards, by a Phoenix syndicate, on the contact of the granite and tuffs, but the ore was too low grade to be mined profitably at that time. During the past few years Copeland sunk a shaft 12 feet and struck much higher-grade ore. All these shafts are within 50 feet of each other.

The surface mineralization, which is chiefly oxidized pyrrhotite and pyrite, with malachite occasionally noticeable in the fractures, occurs in a highly siliceous tuff close to its contact with the granite. At the bottom of the 12-foot shaft, which was the only one examined on account of water, a considerable amount of chalcopyrite was observed. A sample of this ore assayed 0.02 oz. in gold, 4.60 oz. in silver to the ton, and 4 per cent. copper. The general strike of the ore-body appears to be N. 20° W. (mag.), with a dip about N. 65° E., but these bearings can only be estimated owing to the surrounding ground being covered with soil. These claims are an attractive prospect, within 6 miles of the railway and close to a good wagon-road.

Imperial.

This group, consisting of the *Emeline*, *Imperial*, *Imperial No. 1*, *Badger*, *Badger No. 1*, and *Lancashire*, and situated about 3½ miles north of Rock Creek settlement, were reported upon in the 1925 Annual Report. A lease and bond was taken on this group by J. W. Clark, of Greenwood, who in turn bonded it to the Hecla Mining Company, of Idaho. The lower tunnel was driven ahead about 150 feet on the lead and an endeavour made in a small way to prospect the ore-body. A fault was struck 48 feet from the face of the drift and two crosscuts were put in, 21 and 30 feet respectively—one where the ore had faulted and the other 6 feet from the face, in a northerly direction, without picking up the ore again. Another crosscut was run to the south, according to the owners, with a similar result. Early in the autumn the option was dropped by the Hecla Company and J. W. Clark made a shipment of 250 tons of sorted ore from the lower tunnel to the smelter.

The lead, which varies from 4 to 10 feet in width, dips in the outer workings to the south-west (mag.). On approaching the fault the dip gradually changes and the lead completely turns over and plunges apparently below the level. A winze sunk on the fault will probably locate the lead again on a different horizon. Although the ore found up to the present is low grade, the situation of the claims at the railway and Kettle river, and close to electric power, seems to warrant further development in hopes of finding higher values.

GREENWOOD SECTION.

Spotted Horse.

This claim is situated within a quarter of a mile of the town of Greenwood and alongside of the Canadian Pacific Railway tracks. At the present time the property is being worked by the Silver Charm Mining and Milling Company, incorporated with head offices in the Alaska Building, Seattle, Washington. This company has rechristened the claim the *Silver Charm*. The *Spotted Horse* is a Crown-granted claim, No. 887, and will retain its name and number as long as the taxes are in good standing. Spasmodic development dates back over a period of years and, until the present company commenced operations (November 26th, 1927), amounted to two short tunnels and numerous shallow open-cuts on the lead. At the present time, when the property was examined on February 12th, 1927, No. 1 tunnel has been extended about 13 feet, or a total length of about 88 feet, and No. 2 tunnel, which is 45 feet lower (barometric), about 20 feet. A new chute has been built from the ore-sorting shed at the mouth of No. 1 tunnel down to an ore-bin which has been built on the old smelter railway-tracks. At the time of examination four men were working by hand in No. 1 tunnel. It seems to be the intention of this company to install a small air-compressor and engine, which will greatly facilitate development.

The vein, which is a true fissure varying from 4 inches to 3½ feet in width and averaging about 9 inches, consists of pyrite, galena, zinc-blende, and occasional specks of chalcopyrite in a gangue of quartz. The country-rock in the vicinity of the workings is granodiorite. The mineralization in the No. 1 tunnel vein occurs sometimes in banded form and the intimately mixed layers of galena, zinc-blende, and pyrite are separated by thin layers of quartz. In other parts of the vein each mineral appears in scattered segregations, to the exclusion of the others, which suggests different periods of mineralization. Some high assay returns obtained by the owners intimated the presence of some mineral such as tetrahedrite, argentite, or native silver. None of these minerals were observed, but on the mineralized walls of the vein a certain amount of movement had slickensided the galena in places, which gave it the appearance of tetrahedrite or grey copper to the naked eye.

The following samples taken over a period of years point to the fact that the galena found up to the present does not contain a high percentage of silver: Sample No. 1, taken from the highest open-cut in May, 1923, and consisting of nearly all galena, assayed: Gold, trace; silver, 19.20 oz. to the ton; lead, 68 per cent. Sample No. 2, taken from No. 1 tunnel at the same time and consisting of nearly all galena, assayed: Gold, 0.02 oz.; silver, 4 oz. to the ton; copper, trace; lead, 20 per cent.; zinc, 4 per cent. Sample No. 3, taken from the highest open-cut and containing indications of copper, assayed: Gold, trace; silver, 4 oz. to the ton; copper, 0.5 per cent. Sample No. 4, a general sample of the *Spotted Horse* ores, assayed: Gold, 0.04 oz.; silver, 4.6 oz. to the ton; lead, 12.5 per cent.; zinc, 3.3 per cent. Sample No. 5, taken across the vein, 12 inches wide, where the mineralization was massive at the end of No. 1 tunnel, which was 16 feet long, assayed: Gold, 0.04 oz.; silver, 4 oz. to the ton; lead, 17 per cent.; zinc, 12 per cent. Sample No. 6, taken from the dump, which is reserved for mill-feed, on February 12th, 1927, assayed: Gold, 0.01 oz.; silver, 1.4 oz. to the ton; lead, 1.95 per cent.; zinc, 0.80 per cent. Sample No. 7, representing a grab sample taken from the sorted-ore bin, which is reserved for shipping (February 12th, 1927), assayed: Gold, 0.05 oz.; silver, 4.2 oz. to the ton; lead, 5.6 per cent.; zinc, 1.4 per cent. It is quite reasonable to suggest that grab samples are not truly representative of either ore on a dump or in a bin; but it is very apparent that at least 50 per cent. of the shipping-ore is unmineralized quartz which carries practically no values. Unless this ore is very closely sorted and nothing but nearly pure galena saved, which is an extremely difficult and highly expensive operation owing to the intimate association of the different sulphides, there is but a small chance of the company receiving any financial returns from shipments to the smelter at the present time. It was impossible to estimate the probable tonnage of mill-feed on the dump owing to snow and the frozen condition of the ground. On February 12th, 1927, the shipping-bin contained about 20 tons of ore. The samples mentioned above that carried a high percentage of lead were picked especially with the idea of ascertaining the percentage of silver in the galena and therefore do not represent an average.

At the present time a stope 27 feet long has been started near the face of No. 1 tunnel and the ore mined is being sorted for shipment. The vein at this point measures about 3½ feet in width at the widest part and gradually tapers to 12 inches at the east end and 6 inches at the west end. In No. 2 tunnel the vein is about 3 inches wide, is badly crushed and displaced, and

the quartz is practically barren. The strike of the vein is in a north-westerly and south-easterly direction, with a dip varying from 50° to 10° to the north-east. On the face of the hill the vein can be traced for several hundred feet, where it pinches and swells from a fracture to about 4 feet in width and occasionally faults in the direction of its dip. The persistence of this vein, close to transportation, power, and water, seems to warrant further exploration by this company in hopes that it may be able to block out a sufficiently large tonnage of ore that will pay to mill. If the company would install a 2-drill compressor and drive No. 1 tunnel ahead with an upraise every 100 feet, an idea of the mine's value may be arrived at in a comparatively short space of time. By continuing to stope out and only partially sort the ore at present in sight, these future possibilities may be delayed indefinitely. No shipments of ore had been made to the smelter at the time of examination. Until the mine is developed further no reliable estimate of ore tonnage can be made.

The following is a copy of the general mine report of the Silver Charm Mining and Milling Company, Incorporated, for the year ended December 31st, 1926, by A. Franchie, mining engineer, Seattle, Wash.:—

"A total of 150 tons of rock was mined, from which 30 tons of shipping-ore was sorted and about 90 tons of milling was saved for further treatment.

"Three men were employed from November 26th, 1926, making a total of eighty man shifts.

"The upper tunnel No. 1 was driven 5 feet and squared, also a stope was started and also the main level drift, all the working showing good ore. The mine was organized and put in operating condition.

"Mine-timbers were hauled over and shops were reconditioned and powder-house built.

"Formalities and agreement with the Canadian Government, railway company, and power company, everything concerning regulations and mining laws are taken care of.

"The conditions at the mine are very favourable for fast development and large production for the year 1927 as soon as machinery is available. Arrangements will be made immediately for the shipment of the first car of ore, which is expected to bring about $120 a ton with a net return of $100. This ore is being sorted 3 to 1. About 2,000 tons of ore are blocked out, which will amount to about $60,000, conservative estimate.

"The new main drift will probably open up as much more ore and the two levels will be carried farther ahead, driving to the west. It can be expected that the future development probably will bring the tonnage to 16,000 tons or more, averaging $38.56 a ton, average mine-run.

"As soon as modern equipment is installed a car-load (50 tons) of sorted ore can be shipped every week, which will bring up about $3,000 to $5,000 per car-load.

"With modern equipment the mine shall be on a paying basis within ninety days."

The statements made in the above report by A. Franchie, the company engineer, do not agree, in any of the more particular details, with the facts found to exist on this property at the time of examination (February 12th, 1927).

Crescent.—This claim was leased by G. Duhamel and associates, of Greenwood, and a shipment of 14 tons of silver-lead ore made from the old workings, consisting of open-cuts.

Providence.—J. W. Clarke shipped about 47 tons of silver-lead-zinc ore from the dump from this mine to the Trail smelter.

Gold Pick. The development of this claim was continued during part of the year by W. Raveley and Dan McGillis. The vein on which most of the work was done, consisting of pyrite, galena, and sphalerite in a gangue of quartz, strikes S. 40° W. (mag.) and dips about 45° to the south-east (mag.). There are other similar nearly parallel veins within a radius of 50 feet on which some work was done in past years. A tunnel 50 feet above the Canadian Pacific Railway tracks was driven for 70 feet on this vein and a crosscut from the tunnel south for 18 feet. Near the mouth of the tunnel an inclined shaft 10 feet deep was sunk on a vein varying from 2 to 8 inches in width. The vein was discovered later below the railway-tracks at an elevation of about 55 feet lower than the upper tunnel. A shaft was sunk a few feet on this discovery, but the ore was generally pinched and displaced and work was discontinued until 1927.

Elkhorn Fraction. This claim, adjoining the *Providence* mine on the south-west, was bonded in the winter of 1925 by the Elkhorn Mines, Limited, of Victoria. An Ingersoll-Rand 1-drill compressor and 25-horse-power gas-engine were installed. The 70° inclined shaft was extended a distance of 60 feet, making a total depth of 137 feet, with a

70-foot crosscut from the shaft; also 90 feet of drifting and a 24-foot upraise. About 12 tons of silver-lead ore was shipped to the smelter. The vein encountered in the lower workings was spread over a wider area than usual in small veinlets, which prohibited profitable mining. A large part of the quartz was also barren of mineral. It is possible that the vein will consolidate again and the minerals become concentrated at a lower elevation, but this is not by any means certain. Owing to the topography of the valley it is necessary to sink to develop this vein on its southerly extension.

Elkhorn. This claim adjoins the *Elkhorn Fraction* to the west and is owned by Geo. White, of Greenwood. A great deal of development was done between 1904 and 1920, including a 40° inclined shaft 180 feet deep, with drifts at the 40-foot and 80-foot levels, to the north about 400 feet and the south 180 feet, and a crosscut from the north drift into the foot-wall for 100 feet. Other levels have been driven, but owing to the caved condition of the ground it was impossible to measure them accurately. Another vertical shaft has been sunk and various open-cuts excavated, all of which were either caved or filled with water. About 600 feet to the north-east and close to the boundary-line of the *Elkhorn Fraction* and *Providence* claims, a tunnel 150 feet long has been driven and a winze sunk 50 feet inside the tunnel, on a quartz vein varying from 2 to 18 inches in width. A vertical shaft, now caved, was sunk about 50 feet north-east of the mouth of this tunnel.

In the workings of the 180-foot inclined shaft practically all the ore developed above the 80-foot level has been mined, except in places where the vein pinches or has been displaced. The width of the vein, judging by the foot and hanging walls in the old stopes, varied from 2 to 16 inches in width. The ore-minerals observed are pyrite, galena, sphalerite, and argentite. The gangue is quartz. According to the owner, a dyke cut off the vein 16 feet below the 80-foot level (now filled with water), but the same formation in which the vein was formed, was discovered near the bottom of the shaft. A flat diamond-drill hole, bored from the bottom of the shaft, cut what was thought to be 18 inches of oxidized vein-matter, 35 feet distant. This was not proved by development.

The country-rocks in this area are generally described by R. W. Brock as augite porphyrites, agglomerates, and porphyritic tuffs, which are underlain by granodiorite. The vein strikes in a general north-easterly and south-westerly direction and dips from 35° to 45° to the south-east. A sample taken from a 4-inch vein on the 80-foot level assayed 0.04 oz. in gold, 13 oz. in silver to the ton, and 4 per cent. lead. A 6-inch sample of the vein taken from the north side of the 40-foot level assayed 0.10 oz. in gold, 40.6 oz. in silver to the ton, and no lead. In the workings located to the north-east of the main shaft the quartz vein is persistent, but generally low grade, with segregations of galena, pyrite, and zinc-blende. The ore shipments made from the *Elkhorn* mine were as follows:—

Year.	Men below.	Men above.	Tons.	Gold.	Silver.	Lead.
				Oz.	Oz.	Lb.
1905	4	2	9	4	902	1,803
1906	6	1	26	9	1,056	523
1907	1	....	21	8	1,786	430
1911	1	1	24	13	3,720	10,301
1912	....	....	17	90	.....	.....
1917	2	....	8	2	276	.....
	....	....	105	126	7,740	13,057

D.A. Fraction and E.C.B. The crosscut tunnel has been driven on the *D.A. Fraction* a total distance of about 475 feet at an elevation of 125 feet (barometric) below the top of the hill. Two mineralized zones were cut, one at a distance of 135 feet from the portal of the tunnel and the other at 445 feet. Two short drifts on each side of the crosscut were driven on the first zone without finding any attractive mineralization. On the second zone, which is on the contact of the granodiorite and volcanic tuffs and probably the downward extension of the ore-body found in a vertical shaft above, an upraise was driven for 30 feet without discovering any valuable ore. On the *E.C.B.* claim narrow quartz veins con-

sisting of galena, sphalerite, and pyrite were traced on the surface for 200 feet, but insufficient work has been done to prove their value. These veins occur in the granodiorite.

The original owners were J. Graham and J. Skilton, of Greenwood. Recently a company has been incorporated. This claim was mentioned in the Annual Report for 1925.

Brooklyn and Surprise No. 3. This old mine, situated in the Phoenix camp, is now owned by R. Forshaw, of Greenwood. A shipment of 25 tons of sorted ore from the old stopes, containing pyrite and chalcopyrite, was made to the smelter. Another shipment of 7 tons of similar ore was taken from the *Surprise No. 3* in the Skylark camp and mixed with the *Brooklyn* ore, making a total of 31 tons.

Jewel. Geo. White and associates, of Greenwood, have been working in an old shaft at the north end of the *Jewel* mine lead and have discovered bunches of high-grade ore about 20 feet below the surface. The lead, according to the owners, varies from 5 to 7 feet in width and looks like fairly good milling-ore. Two samples of the high grade assayed 6.96 oz. in gold and 45.6 oz. in silver to the ton and 9.66 oz. in gold and 52.1 oz. in silver to the ton. A shipment of cleanings from the mill and sorted ore from the waste-dump amounting to 58 tons was made to the smelter.

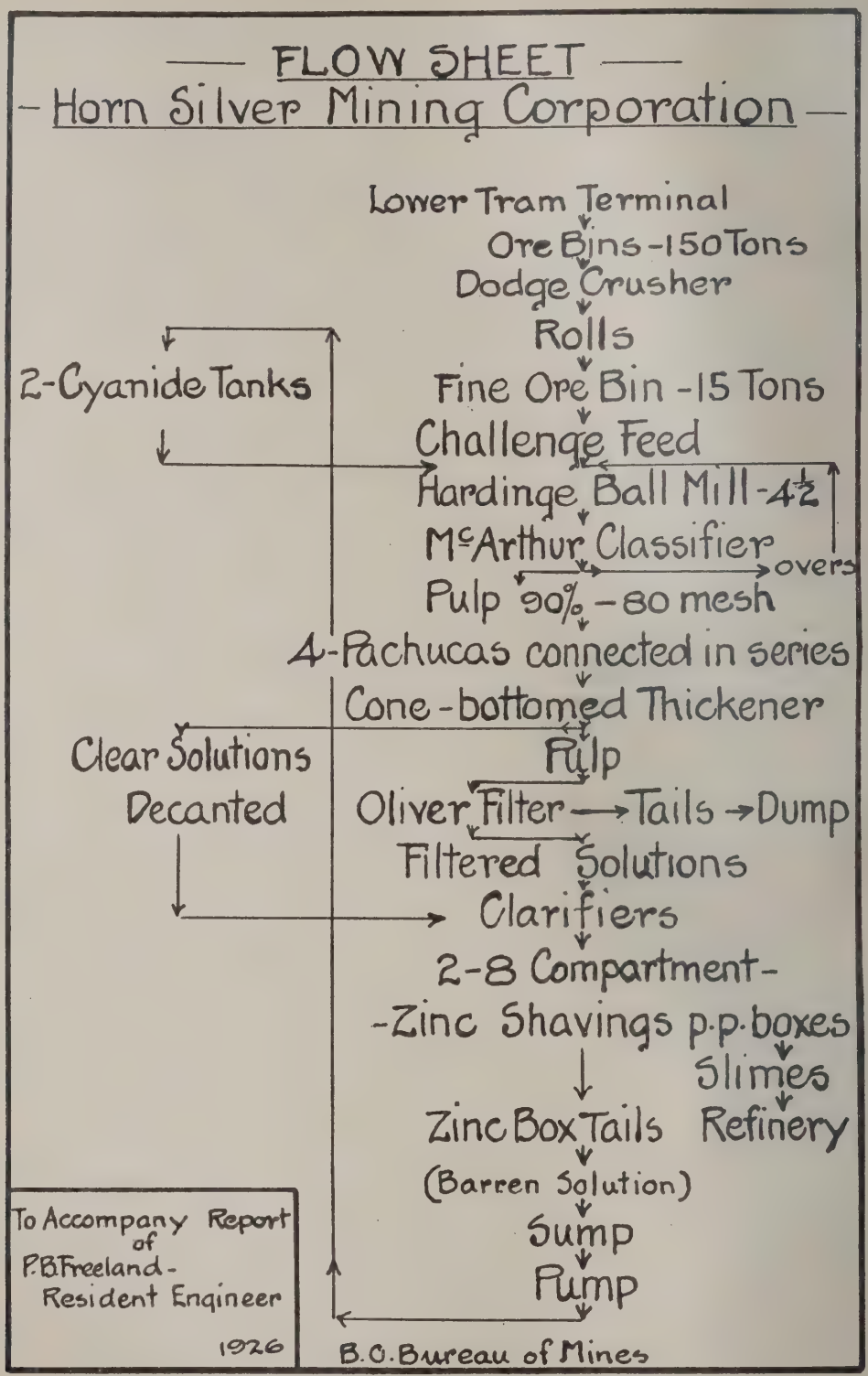
OSOYOOS MINING DIVISION.

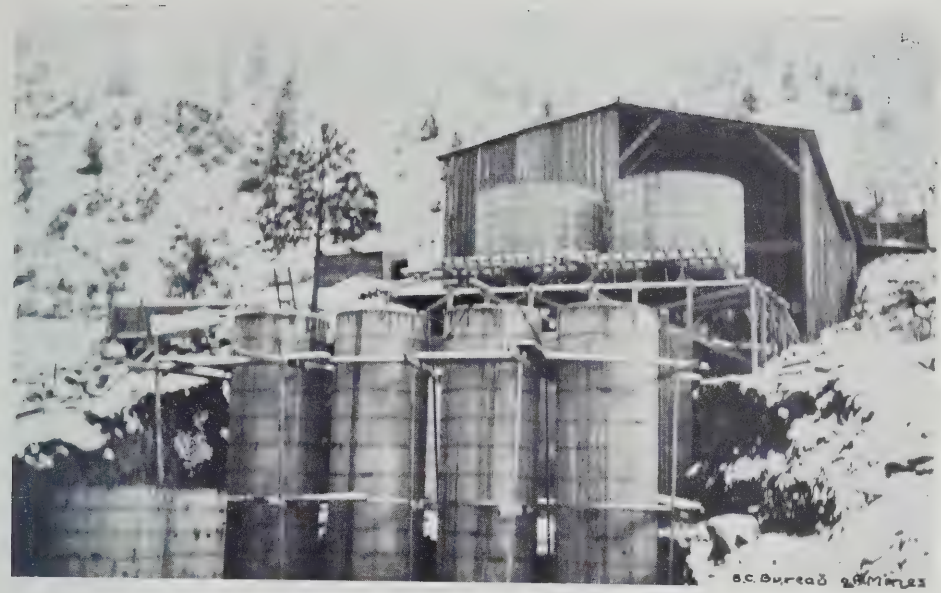
Horn Silver Mining Corporation. This company continued its operations on the *Horn Silver* group of claims, 6 miles from Similkameen Station, during the greater part of the year. Owing to unforeseen difficulties the mill was not completed until late in the spring and actual production was delayed until about June 1st. A flow-sheet of the crushing and cyanide plant is attached to this report. The capacity of this plant is estimated to be about 22 tons every twenty-four hours, but owing to a shortage in power the crushing plant had to be shut down for eight hours during the twenty-four, so that sufficient compressed air could be supplied to run the machine-drills in the mine. A great deal of trouble occurred in the mill, due, chiefly, to a second-hand Oliver filter which did not function properly and was consequently responsible for the low tonnage, a loss of time, and of values in the tailings. This defective machine has been partially reconstructed and will probably operate successfully in future. A total of 668 tons of ore was milled between June 1st and September 30th. The average consumption a ton of dry ore in the mill was as follows: Cyanide, 3.5 lb.; lime, 6 lb.; zinc, 1 lb.

A new ⅝-inch cable 5,000 feet long, carrying twenty-four wooden buckets, was installed between the mine and the mill. The capacity of each bucket is about 155 lb. A new 2½-inch pipe-line was also connected up between the mine and the compressor plant. A total of 582 feet of drifting, upraising, and sinking constituted the mine-development up to September 30th.

Owing to the shortage of power it was found impossible to carry on any extensive development programme and very little virgin ground was explored. On the east side of the mine, in the north drift, some very high-grade silver ore was found, but owing to the extremely flat dip of the vein stoping operations were naturally expensive. On the west side the vein was generally oxidized and the silver values varied considerably. Some good milling-ore, averaging about 30 oz. to the ton in silver, was found in a winze at the end of the east crosscut. The vein at that point has a dip of about 40° and apparently conforms to the slope of the ravine. The width of the vein in the mine has varied from time to time from 2 inches to 5 feet, and contains argentite, native silver, gold, galena, sphalerite, pyrite, and a trace of chalcopyrite in a gangue of quartz.

Operations ceased in the early winter and the company, it is understood, is contemplating additional financing. To operate this mine successfully it is absolutely necessary to install another power unit to supply compressed air for development, and it is also necessary to keep the mill running at full capacity during the twenty-four hours. If sufficient ore of an average grade of 25 oz. in silver to the ton can be developed in the mine to supply the mill with 22 tons, or to full capacity, in twenty-four hours, a good margin of profit may be assured under economic management and a continued price of silver at 55 cents an ounce. There is no doubt, providing the Oliver filter will function, that a high percentage of extraction can be maintained in the mill. The driving of the lowest west tunnel may be suggested as an economical way to exploit that section of the vein developed in the present west tunnel and in the winze on the east side.


FLOW SHEET
Horn Silver Mining Corporation
Lower Tram Terminal
Ore Bins - 150 Tons
Dodge Crusher
Rolls
Fine Ore Bin - 15 Tons
Challenge Feed
Hardinge Ball Mill - 4½
McArthur Classifier
overs
Pulp 90% - 80 mesh
4 - Pachucas connected in series
Cone - bottomed Thickener
Pulp
Oliver Filter → Tails → Dump
Filtered Solutions
Clarifiers
2 - 8 Compartment -
- Zinc Shavings p.p. boxes
Slimes
Refinery
Zinc Box Tails
(Barren Solution)
Sump
Pump
2 - Cyanide Tanks
Clear Solutions
Decanted
To Accompany Report
of
P.B. Freeland -
Resident Engineer
1926
B.C. Bureau of Mines



Horn Silver Mining Corporation—New Plant.

Horn Silver Mining Corporation—New Mill.

The continuation of the north tunnel on the east side with upraises every 50 feet to the vein may also be recommended. This mine has been referred to in the Annual Reports for 1919, 1920, 1921, 1923, and 1925.

Duffy. This group, situated close to the town of Hedley, consists of the *Midnight Sun*, *Union Fraction*, *Canadian Bell*, *Northern Light Fraction*, *Lions Paw*, *Copper World Fraction*, *Lorenia*, and *Reno* claims. The owners are J. D. Brass, R. E. Baxter, J. Robinson, of Hedley, and J. R. Campbell, of Keremeos. These claims lie to the northwest of the Hedley Gold Mining Company's claims and beyond the Bradshaw fault. (*See* map in Camsell's Memoir No. 2, G.S.C.) The local geology, described by Chas. Camsell in his Memoir No. 2, G.S.C., "Geology and Ore Deposits of the Hedley Mining District," page 42, is as follows:—

"The oldest rocks of the Hedley area are sedimentary rocks, presumably of Carboniferous age, and correlated with the Cache Creek group of Dawson's Kamloops map-sheet. These are the only consolidated sediments in the area, and they include, besides the true sedimentary rocks, a great thickness of contemporaneous volcanic materials, generally of explosive volcanic origin. They have been tilted in a general direction toward the west and they now dip at angles varying from 15° to 90°.

"Eruptive rocks have been intruded through these rocks in the following order: (1) Quartz diorite and gabbro; (2) granodiorite. These igneous rocks have been accompanied or followed by many dykes of different compositions, porphyrites, lamprophyres, andesites, and rhyolites.

"The last and most recent group of rocks in the sequence are the unconsolidated deposits of sand, gravel, and silt, of glacial and post-glacial origin, which are generally found lying as a thin mantle over the older rocks or forming the floors of the valleys.

"*Table of Formations.*

"In the accompanying table the different geological formations are arranged in descending order, according to age, and it includes the igneous as well as the sedimentary bodies.

"Quaternary—Stream deposits and glacial drift.
Tertiary—Granodiorite.
Mesozoic—Diorite and gabbro.
Carboniferous—Cache Creek group.
(4.) Aberdeen formation.
(3.) Red Mountain formation.
(2.) Nickel Plate formation.
(1.) Redtop formation."

Development-work consists of open-cuts, short tunnels, and shallow shafts, most of which has been done on the *Copper World* and *Reno* claims. As this work was done many years ago, the workings were in many instances caved and in some cases impossible to locate owing to slides from the steep mountain-sides having filled them in. Several samples were taken from the workings with an idea of obtaining an average of the ore developed. The assay results are as follows:—

Description.	Gold.	Silver.	Copper.
	Oz. per Ton.	Oz. per Ton.	Per Cent.
Reno, 20-foot tunnel, 6-foot sample right side	0.05	0.15	0.46
Reno, 20-foot tunnel, 8-foot sample across face and right side	0.05	Trace	Trace
Reno, big slide	0.02	Trace	0.68
Reno, pyrrhotite from big slide	0.05	Trace	0.33
Copper World, 5-foot tunnel on bluff	0.23	1.09	1.16

Other samples carried a trace in gold, silver, and copper. These samples were not assayed for arsenic.

According to the owners some high assay returns had been received in the past, and possibly these may have been the results of picked specimens rather than average samples. There is without doubt a great deal of mineralization throughout the limestones in several localities on the claims, but further work and higher-grade ore will have to be found before outside capital can be interested. The location of these claims on the Hedley Creek slope is ideal for operation.

Kingston. This group lies within a few hundred feet to the south-east of the *Duffy* group and comprises the following claims: *Kingston*, *Metropolitan*, *War Horse*, *Grand View Fraction*, and *King Fraction*. These claims were described in detail by Chas. Camsell, of the Geological Survey, in 1910 and it will be unnecessary to repeat his report here. Only a small amount of development-work has been done since this report was published and no discoveries of importance have been made.

Samples taken from the *Metropolitan* underground workings assayed as follows: 2½ feet of oxidized material on hanging-wall of the upper tunnel, 0.17 oz. gold and a trace of silver to the ton; 6½ feet of sulphide ore (arsenopyrite) next to the hanging-wall, 0.42 oz. gold and 0.08 oz. silver to the ton; 3 feet of oxidized material on foot-wall, 0.42 oz. gold and a trace of silver to the ton; special high-grade streak in lower tunnel, 1 oz. gold and 0.12 oz. silver to the ton. A sample taken over 5 feet in the inclined shaft on the *Kingston* assayed: Gold, 0.10 oz.; silver, 0.78 oz. to the ton; copper, 2.64 per cent. Samples taken from the upper tunnels on the *Kingston* assayed a trace in gold and silver.

The sample of ore, mineralized chiefly with arsenopyrite, from the *Metropolitan* was taken across the widest part of the deposit. Drifts have been driven both ways from the centre of this ore-body and the mineral-zone gradually diminishes in size and has a total length on the strike of about 21 feet. No commercial walls were discovered and the sulphides gradually decreasing were replaced by silicates. In the tunnel below only narrow stringers representing this ore-shoot were in evidence. It is possible that a continuation of this zone may be found above the upper tunnel. The difference in elevation between the lower and upper tunnel is 35 feet (barometric).

The country-rock in which the ore occurs is limestone which has been invaded by quartz diorite, gabbro, diorite porphyry, and granodiorite. On the *Kingston* the sedimentary rocks belong to the upper portion of the Nickel Plate formation and consist of beds of limestone which are intermingled with quartzite and tuffs. Most of these beds have been highly altered by intrusive rocks and generally consist of garnet, epidote, and lime silicates. The sedimentaries are invaded by quartz diorite, granodiorite, diorite porphyries, and gabbro dykes.

There are two types of deposits on the *Kingston*, one principally made up of chalcopyrite and pyrite and the other arsenopyrite containing gold. Most of the work has been done on the *Kingston*. The shaft, 35 feet deep at the portal of a tunnel 22 feet in length above the cabin, is highly mineralized with chalcopyrite, pyrite, and occasional segregations of arsenopyrite. A sample taken over 5 feet of this material (*see* above) was sufficiently attractive to warrant more work being done. It was impossible to examine the bottom of the shaft owing to water, but if this body of ore extends on the dip of the sedimentaries a considerable tonnage of concentrating-ore may be developed.

Other tunnels driven 45 feet higher up the hill developed segregations of arsenopyrite. Two general samples taken from different locations in this tunnel carried a trace in gold and silver to the ton. Much higher assays have been obtained from the oxidized material on the surface. The *War Horse*, which adjoins the *Kingston*, was not examined, but according to Chas. Camsell's report about 200 feet of tunnelling and much surface work has been done. The ore is chiefly chalcopyrite.

Future operators on this group should bear in mind the fact that the ore-bodies on Nickel Plate mountain swell and pinch and are lenticular in shape laterally, which is characteristic of these types of deposits in limestone, and consequently larger bodies may be developed from mineralized fractures.

Peggy. This group, consisting of the *Peggy*, *Hobo*, *Jumbo*, *Tipperary*, *War Eagle*, *Whirlwind*, and *Cyclone* claims, is situated on the divide between Hedley creek and the Similkameen river, about 1½ miles north-west of Hedley. An option was taken on the group by the Consolidated Mining and Smelting Company and a considerable amount of diamond-drilling done. The results of this exploration-work have not been published and the company has not done any further development up to the present time.

Hedley Gold Mining Co.—This company operated its *Nickel Plate* property during the greater part of the year and a total of 49,656 tons was mined and milled. An intensive geological survey was made over the mine area with the idea of locating favourable places for diamond-drilling.

Nelson. This claim, owned by James McNulty, of Hedley, and situated on Independence mountain about 7 miles from Hedley, has been leased and bonded by the Hedley Gold Mining Company. Very little development-work was done owing

to the lateness of the season when the option was taken. This claim has been reported upon in the Annual Reports for 1923, 1924, and 1925.

Daisy. This claim, owned by J. Bouden *et al.*, of Similkameen, is situated about 6 miles below Similkameen Station on the Great Northern Railway and on the west side of the river. Development-work consists of numerous open-cuts and stripping and two tunnels, one 30 feet and the other 10 feet in length, with a difference in elevation of about 18 feet. The vein varies from 1 to 6 inches in width and is mineralized with pyrite, chalcopyrite, tetrahedrite, and argentite in a gangue of quartz. A sample from 6 inches of the vein at the end of the 30-foot tunnel assayed: Gold, 0.04 oz.; silver, 185 oz. to the ton; copper, 3 per cent. The vein strikes about S. 50° W. (mag.) and varies in dip from the horizontal to 45° north-west.

To the south of the 30-foot tunnel for 300 feet the vein has been step-faulted and considerably fractured. Pyrite is the predominating mineral in this direction, with occasional segregations of chalcopyrite and films of tetrahedrite in the fault-planes. It is possible that the mineral tetrahedrite is of secondary origin in the fractured zones to the south of the main workings, although its primary origin is assured in the 30-foot tunnel and below that elevation.

Further development seems justified on account of the silver values in the ore in the face of the upper tunnel and the continuation of the 10-foot drift may be recommended. The situation of this claim close to the wagon-road, the Similkameen river, and within 4 miles of Chopaka Station on the Great Northern Railway makes it an attractive prospect for small capital interests.

Gypo and Ballarat. These claims, owned by Oliver interests, are situated about 1 mile north of the town of Oliver, on the west side of the wagon-road. A lease and bond was taken on the group by the Consolidated Mining and Smelting Company, of Trail, and a shipment of 254 tons made to the smelter, chiefly for fluxing purposes. A considerable amount of diamond-drilling was done and a tunnel about 40 feet long driven across the vein, as well as other development-work. The lead varies from a few inches to about 20 feet and contains pyrite, marcasite, and infrequent specks of galena and chalcopyrite in a gangue of quartz and gneiss. Owing to the low and spotty values in the areas explored, work was discontinued in the autumn of 1926.

White Lake Basin.

Southern Okanagan Collieries, Ltd.—Development-work was carried on spasmodically throughout the year on two seams of coal varying from 3 to 4 feet in width. Owing to the presence of pyrite and "bone" in both tunnels it was considered necessary to construct a washing plant to clean the coal before shipment. At the time of examination some of the machinery had been purchased, second-hand, and was ready for installation but not housed. Concrete foundations were also laid and camp accommodations built. The presence of "bone" is considered by the operators to be a surface condition, owing to the irregularity of the impurities in the seams and the shallowness of the present workings.

The erection of a temporary washing plant was thought necessary to enable the company to ship coal, which would help to finance further operations. If the money spent on shallow development and surface plant had been used for sinking a prospect-shaft a more comprehensive idea of conditions at depth might now be known, and also some tonnage of coal blocked out, which would enable those interested to offer some tangible asset to capital. The details of this property, including coal analyses, are referred to in the 1920 and 1922 Annual Reports.

SIMILKAMEEN MINING DIVISION.

Granby Consolidated Mining, Smelting, and Power Co. (Allenby Copper Co.).

On October 1st, 1926, the Allenby Copper Company was merged with the Granby Consolidated Mining, Smelting, and Power Company and is now known by the latter name. Since operations at Copper mountain and Allenby seem to be fairly well established and successful, a history of development, which has been spread over many years, is condensed here.

History.—The British Columbia Copper Company, of Greenwood, did the first substantial development-work on Copper Mountain properties in 1905 and then dropped its option. The reason for this was due to the then complex problem of smelting direct ores that contained a

high percentage of alumina. The same company took another option on these claims and on Voigt's claims in 1911 and developed the properties by means of diamond-drilling, open-cuts, trenching, tunnels, and shallow shafts. This option was again dropped and another one obtained by the same company on the Copper Mountain properties in 1912, and development-work continued from that date until December, 1920.

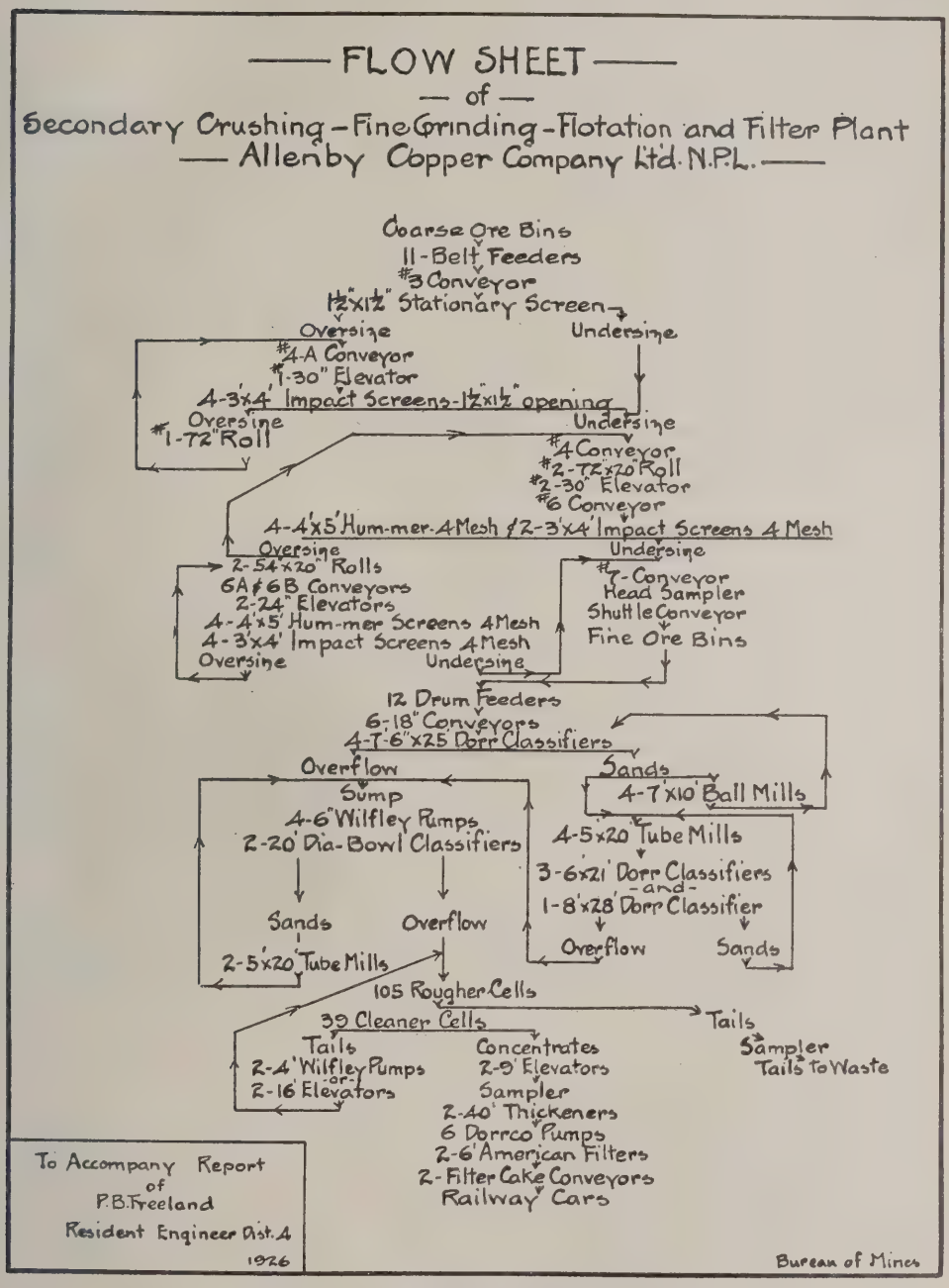
On account of the necessary high expenditures in developing and purchase of the Copper Mountain properties and the exhaustion of the ore-bodies at Greenwood during these years, the British Columbia Copper Company found it necessary to refinance. The result was the forming of a new company called the Canada Copper Corporation, which controlled and financed the older organization. In 1916 a temporary 500-horse-power steam-electric plant was built at Princeton and a 14-mile power-line erected to Copper mountain to facilitate operations. Up to the end of 1917, 114,819 feet of diamond-drilling, 14,798 feet of tunnelling, 90 per cent. of which was 9- by 10-foot tunnels, 6,056 feet of upraising, 641 feet of sinking, and 25,084 feet of surface-trenching was done on the Copper Mountain property alone, with a total expenditure of $1,250,000. Besides analyses on all the diamond-drill cores in ore, test-holes were made with stopers every few feet and the cuttings analysed.

By the end of 1919 the concentration plant at Allenby was practically completed, but active operations were delayed on account of a strike amongst the employees on the railway being built between Princeton and Copper mountain. Much development-work was done at the mine during 1918 and 1919 and everything was in readiness for operation except the primary crushing plant, which awaited the completion of the railway. Electric power was supplied by the West Kootenay Power Company on October 19th, 1920, and both mining and milling commenced shortly afterwards. In December, 1920, the mine and mill closed down on account of being unable to operate when copper was 13 cents a pound. An average of the general analyses of the ores taken from the mine at that time is as follows: Copper, 1.77 per cent.; silica, 50 per cent.; iron, 5.8 per cent.; lime, 9.1 per cent.; sulphur, 1.1 per cent.; alumina, 19.9 per cent.; gold, 0.005 oz.; silver, 0.20 oz.

During 1921 and 1922 the mine and mill remained inactive and the old Canada Copper Corporation was absorbed by the Allenby Copper Company in the interests of the Granby Company. In 1923 a certain amount of work was done on the railway between Princeton and Copper mountain and a force of men employed at the mine and mill preparatory to active operations. The new company discovered that alterations in the mill would take longer to finish and needed a greater monetary outlay than was at first estimated; consequently production was again delayed. The price of copper declined to such an extent in 1924 that nothing of interest took place. Early in the year 1925 the company, under the general managership of Charles Bocking and H. C. Smith as resident manager, remodelled part of the mill and during the latter part of August commenced operations of an experimental nature which required minor changes in the mill flow-sheet from time to time.

Mill.—In 1926 the mill was gradually brought to full capacity and the flow-sheet attached to this report is more or less fixed. Several major changes have been made in the mill since it was first built, such as a separate department for the crushing plant, the addition of one 72- by 20-inch roll, Bowl classifiers, and Dorr classifiers. The primary crushing plant below the mine now consists of a 400-ton coarse storage-bin, one 30- by 42-inch Farrell-Bacon crusher, two 10-inch fine reduction 1½-inch size gyratory crushers, a Trapper conveyor, and a 2,000-ton fine storage-bin.

Shortly after bringing the mill up to full capacity some trouble was experienced in retaining the tailings in the reservoirs below the plant and the overflow contaminated the waters of the Similkameen river to a small extent, causing some inconveniences locally. To remedy this trouble the company purchased what is known as Hitchins flat, between Allenby and Princeton, which has an area of approximately 76 acres and a capacity of about 10,000,000 tons of tailings. A flume 24 inches wide by 12 inches high has been built on a 2-per-cent. grade between the mill and the tailings-pond. At the north end of Hitchins flat a dam 600 feet long, with a maximum height of 40 feet and 30 feet wide on top, is being constructed of earth with a core wall 6 feet wide built of 2- by 8-inch and 2- by 6-inch timber and filled with puddled clay and sand. There will be a 30-foot-wide spillway and a flume to carry off the overflow when the pond is filled, which will probably be some years hence. At the present time two Akens classifiers taken from the mill are being used for building dams on the old reservoir-site and probably three more of


FLOW SHEET
— of —
Secondary Crushing - Fine Grinding - Flotation and Filter Plant
— Allenby Copper Company Ltd. N.P.L. —
Coarse Ore Bins
11 - Belt Feeders
#3 Conveyor
1½"x1½" Stationary Screen
Oversize
Undersize
#4-A Conveyor
1-30" Elevator
4-3'x4' Impact Screens-1½"x1½" opening
Oversize
1-72" Roll
Undersize
#4 Conveyor
2-72"x20" Roll
2-30" Elevator
#6 Conveyor
4-4'x5' Hum-mer-4 Mesh & 2-3'x4' Impact Screens 4 Mesh
Oversize
2-54"x20" Rolls
6A & 6B Conveyors
2-24" Elevators
4-4'x5' Hum-mer Screens 4 Mesh
4-3'x4' Impact Screens 4 Mesh
Oversize
Undersize
Undersize
#7 - Conveyor
Head Sampler
Shuttle Conveyor
Fine Ore Bins
12 Drum Feeders
6-18" Conveyors
4-T-6"x25 Dorr Classifiers
Overflow
Sump
4-6" Wilfley Pumps
2-20' Dia-Bowl Classifiers
Sands
2-5'x20' Tube Mills
Overflow
Sands
4-7'x10' Ball Mills
4-5'x20' Tube Mills
3-6'x21' Dorr Classifiers
- and -
1-8'x28' Dorr Classifier
Overflow
Sands
105 Rougher Cells
39 Cleaner Cells
Tails
2-4' Wilfley Pumps
or
2-16' Elevators
Concentrates
2-9' Elevators
Sampler
2-40' Thickeners
6 Dorrco Pumps
2-6' American Filters
2-Filter Cake Conveyors
Railway Cars
Tails
Sampler
Tails to Waste
To Accompany Report
of
P.B. Freeland
Resident Engineer Dist. 4
1926
Bureau of Mines

these machines will be used for this purpose. This scheme, although somewhat slow, is giving excellent results and the coarser material in the tailings from the mill, which is separated by these machines, packs very closely and makes a water-tight dam.

Some of the dwelling-houses at Allenby were painted, which gives a more prosperous appearance to the surroundings. The company store and mess-house has been rented and is being managed by Al. Armstrom. There are at present fifty-four dwelling-houses and 138 employees at Allenby. Water is supplied to the mill and town by a pumping system installed on the Similkameen river 600 feet below, with a capacity of 850 gallons a minute. A total of 669,000 tons of ore was milled during 1926 and the concentrates shipped to the Trail smelter.

Mine.—Fifty per cent. of the ore mined at the Copper Mountain properties was taken during the summer months from three major glory-holes. Owing to an overburden from 1 to 4 feet in depth it was found necessary to strip the surface before commencing to mine. This work was done partly by a drag-line scraper attached to a small hoist and partly by horses and scraper and with shovels. Some difficulty was experienced when mining one of the glory-holes owing to disintegrated offshoots from the quartz-porphyry dykes which invade the area; and it was found impossible to blast without breaking down a considerable quantity of dyke-rock, which lowered the grade of ore. No definite plan, it is understood, has been worked out to correct this trouble, but it seems probable that sorting-belts may be used and the quartz-porphyry dyke-rock, which is light brown in colour, rejected. During the winter months, when the snow is deep, practically all mining is carried on underground.

The ore from the glory-holes, No. 1 tunnel (elevation 4,073 feet) and above No. 2 tunnel (elevation 3,945 feet), is dumped into a zigzag ore-pass which connects No. 2 tunnel with the present bottom level (3,170 feet elevation). At the bottom of the ore-pass a large storage-pocket has been excavated. Westinghouse 7½-ton electric motors, attached to 7½-ton Granby-type ore-cars, haul this ore to the primary crushing plant at the end of the railway. It is the intention of the management, later, to run two or three levels between the 3,170-foot and the 3,945-foot to facilitate mining the ore developed in that area. Development is being carried on continuously and a diamond-drill is being used for exploration. A surface tram 6 by 8 feet, attached to a ¾-inch cable and operated with a hoist, has been constructed between the 3,170-foot and the 3,945-foot level to haul up supplies and men brought in by the train from Princeton. There are three Rand compressors used at the mine—one of 4,000 cubic feet capacity, one 2,500 cubic feet, and one 1,000 cubic feet; all of which are driven by electric motors. The types of rock-drills used at present are the Waugh, Ingersoll-Rand R. 72, and Chicago Pneumatic No. 5. A Gould triplex pump is installed on the Similkameen river, having a capacity of 100 gallons a minute under 800 lb. pressure and a total lift of 1,700 feet, to supply the mine and town with water. Coal fuel is used for the auxiliary plant, which generates steam-heat for the offices, plant, etc., at the mine. There are forty-four dwelling-houses and bunk-houses to accommodate 218 employees. The store has been rented and is being managed by Wagenhauser & Co., of Princeton. The mess is conducted by the company at the present time. The West Kootenay Power Company, of Bonnington Falls, supplies the mine and mill sub-stations with a 60,000-volt electric current which is transformed into 2,200, 440, and 110 volts. A total of 665,508 tons of ore was mined and shipped to the mill at Allenby by two ore-trains a day during 1926. The geology of the Copper Mountain mines and Voigt's camp was surveyed by Victor Dolmage, Chief of the Geological Survey at Vancouver, and his report upon this area is looked forward to with interest.

Princeton Mining and Development Co.

This company's property, situated 4 miles east of Princeton, has been reported upon in the Annual Reports for 1922, 1923, 1924, and 1925. During 1926 the upraise from No. 3 tunnel has been extended a total distance of 150 feet on an incline. Variable quantities of ore from 2 to 12 inches in width have been developed for 60 feet in this upraise. This ore pinches and swells and consequently it is difficult to estimate probable tonnage until more work has been done. A picked sample of the ore containing some tetrahedrite from this upraise, taken by the owners, assayed: Gold, 0.06 oz.; silver, 12 oz. to the ton; copper, 30 per cent. An average of the ore will probably be very much lower. In the No. 3 tunnel, which has been driven about 900 feet from the portal, ore has also been encountered. The vein material is about 2 feet wide and contains variable quantities of ore from 1 to 8 inches in width. A contract to drive 150 feet of tunnel on No. 2 level was given to J. Carlson, of Princeton, in October. This work is an extension

of the tunnel driven in former years, and for 30 feet the drift remained in ledge-matter, containing variable quantities of ore. At this point the quartz-porphyry dyke encountered in No. 3 tunnel was struck and crosscut for about 90 feet. At the end of the year a small amount of copper carbonates was noticeable in the fractures of the dyke-rock in the face of the tunnel and it seems probable that only a short distance ahead the lead will again be picked up in the andesite. The face of the upraise from No. 3 tunnel is about 200 feet ahead of and farther south from the face of No. 2 tunnel.

Assertions were made and assay certificates produced by one of the stockholders in this company, showing that some samples taken from this property had been assayed and that high values in the platinum group of metals had been discovered. In the presence of the manager, Fred Foster, duplicate samples were taken from the same places as those mentioned above and no platinum or palladium was found. This ore, chiefly chalcopyrite, tetrahedrite, malachite, and azurite in a gangue of quartz and siderite, is not associated or in contact with any of the known platinum-bearing rocks.

Development-work from time to time has uncovered some high-grade chalcopyrite and tetrahedrite, both on the surface, in the No. 3 tunnel and in the upraise from the No. 3 tunnel. The difference in elevation between the surface showings and the No. 3 level is approximately 1,100 feet. The width of the lead varies from 2 inches to 10 feet, but the high-grade ore has seldom been found over 1 foot in width and as far as development has gone the average width is much lower. In the No. 2 tunnel, which is approximately 160 feet higher than No. 3, the ore, which is chiefly carbonates of copper with nodules of chalcopyrite and tetrahedrite, is shot through the lead, which varies from 6 inches to 10 feet in width. This ore might be advantageously sorted and shipped, but the first 50 feet cannot be estimated as mill-feed for an oil-flotation plant on account of the high copper-carbonate contents.

The continuous indications of copper on the surface of this claim, except where the quartz-porphyry dykes cut the andesite, makes it an attractive prospect. It is possible that wider lenses or shear-zones containing high-grade copper minerals may be found, and with that end in view further development-work seems justified.

Voigt's Camp.

A large group of claims situated on Copper mountain and lying to the north of the Granby Company's holdings has been owned by Emil Voigt for many years. A lot of development-work has been done from time to time on some of the claims which has uncovered several mineralized bodies containing copper and gold. In the late winter of 1926 the Consolidated Mining and Smelting Company, of Trail, put a crew of men to work fixing up the camp, and, it is understood, a diamond-drilling campaign will be carried on during 1927.

Summit Camp, Tulameen.

This camp has been described at different times in past Annual Reports and the various properties reported upon according to their merit. For the first time since the camp was discovered there seems to be a sufficient amount of capital available to prove absolutely whether or not some of the ore-bodies discovered are large enough or valuable enough to make paying mines.

History.

A short history of events pertaining to mining operations at Summit camp have been furnished by the management and are related forthwith. Chas. Connelly was supposed to have staked the first claim, now called the *Eureka*, in 1894. In 1895 Fred Sutter discovered other outcrops of ore about 2 miles away and in 1896 F. Sutter and John Amberty staked the *Vigo*, *Lulu*, *Sutter*, and *Skyline* claims for Indiana capital. In 1906 A. Jensen staked the *Silver Chief*, or what is now known as the *Mary E.*

In 1909 or 1910 Wm. Dornberg formed a company called the Treasure Mountain Mining Company, of Spokane, Wash., with a capitalization of 1,000,000 shares at $1 each. Most of these shares were sold for about 5 cents each. Work commenced in 1910 and the upper tunnel was driven. Later, the lower tunnel, 400 feet below, was driven, and work ceased about 1912. From that time until 1915 nothing but assessment-work was done. Later, when no more money was available, the claims were restaked and in 1922–23 W. Dornberg and C. Loeb financed some

developments in the lower tunnel. In 1925 a new company was formed at Bellingham, Wash., called the Mary E. Mining Company, with a capitalization of 2,000,000 shares, some of which were sold from 1½ to 25 cents a share. This company was still operating when arrangements were made between W. Dornberg and C. C. Julian, of Los Angeles, Cal., in 1926 to take over the interests of the company. The stockholders of the Mary E. Mining Company were given an opportunity, it is understood, to participate in the C. C. Julian Company or to sell their holdings at some profit to that company. Arrangements were also made to take over the holdings of the Capital Mining Company, owning the *Blue Bell* in the same camp.

Transportation.

The railway-line from Princeton to Tulameen and beyond was built between 1908 and 1912, which opened up rail transportation between Vancouver and Tulameen and the United States and Tulameen via Oroville, Wash. Shortly afterwards 6 miles of wagon-road was built from Tulameen up the Tulameen river. From that point a good pack-trail traversed the west bank of the river to Summit camp. Another trail also crosses the Coquihalla range from Jessica Siding to Summit camp, a distance of about 10 miles, but this trail is too steep for practical use.

During 1925 and part of 1926 the Mary E. Mining Company built about 16 miles of wagon-road between the end of the old road (6 miles from Tulameen) and Summit camp. A further 1¾ miles was built, it is understood, to the *Blue Bell* claim by the Capital Mining Company. The Provincial Government assisted the building of the 16 miles of road to the extent of $8,500 and the loan of some equipment. The total cost of the road, including bridges, is not to hand, but it probably cost in the neighbourhood of $2,000 a mile. This road is narrow and crooked but the gradients are fairly low.

Present Company.

The Julian Merger Mines, Incorporated, with head office at 634 South Spring Street, Los Angeles, Cal., is capitalized for 15,000,000 non-assessable shares of a par value of $1 a share. This mother company owns control of the Cascade Consolidated Silver Mining Company (Mary E. Mining Company) and the Blue Bell Silver Mine (Capital Mining Company) at Summit camp, Tulameen.

The Cascade Consolidated Silver Mining Company, with offices at 519 Rogers Building, Vancouver, is capitalized for 2,000,000 shares with no par value advertised. The Blue Bell Silver Mine of the same address in Vancouver is capitalized for 1,000,000 shares with no par value advertised. W. B. Dornberg is mine manager; Mona Munro, secretary-treasurer; and Ross Hole, accountant in the Vancouver office. At the mine Angus Beaton is foreman and S. Allan is time-keeper. Both properties are directed from the same office and the mining-work from the Cascade Company's camp office.

The Cascade Consolidated Silver Mining Company's group is situated partly on the summit and partly on the south slope of Treasure mountain, a distance of approximately 22 miles from the town of Tulameen, on the Kettle Valley Railway. The group consists at present of the *Mary E.*, Lot 1160, area 51.65 acres; the *Dorothy*, Lot 1162, area 32.24 acres; the *Hattie*, Lot 1163, area 19.48 acres; and the *Vivian*, Lot 1161, area 46.19 acres. These claims have been surveyed but have not been officially Crown-granted (January 18th, 1927) on account of an adverse action being brought by other interests due to a confliction of ideas regarding the location-line between No. 1 and No. 2 posts on the *Mary E.* claim.

Former Development.

Major development prior to 1926 on the Cascade Consolidated property consisted of a shaft and two tunnels. The shaft, situated on the summit of the hill and said to be about 40 feet deep, has never been examined by the writer on account of being full of water. There is galena and sphalerite on the dump.

No. 1 crosscut tunnel is about 87 feet long with a drift 125 feet long on the vein. Ore exposed varies from 1 to 8 inches in width, with about 4 feet of gangue impregnated with galena and sphalerite. About 400 feet lower in elevation No. 2 crosscut tunnel was driven about 688 feet. The vein was cut at about 590 feet and on the other side of the dyke at about 614 feet. Both veins were drifted on for a total distance aggregating about 270 feet, with an upraise 50 feet on the first vein struck. On the foot-wall or north-easterly side of the porphyry dyke an ore-shoot

Allenby Copper Co.—Glory-hole.

Sootheran's Platinum Placers, Tulameen River.

containing lead and zinc, 160 feet long and varying from 1 inch to 1 foot in width, has been developed. On the south side of the dyke an ore-shoot about 30 feet long and 10 inches wide, containing mostly zinc, has been uncovered. The ore-body persists in width for about 25 feet up the raise, where it commences to disappear. The upper part of the upraise is inaccessible at present. The west foot-wall drift was still in ore.

Development-work in the *Blue Bell* consisted of an upper open-cut 54 feet long, elevation 4,920 feet (barometric); a crosscut tunnel at an elevation of 4,900 feet (barometric) 82 feet long, with drifts on the vein for 50 feet; and four trenches and open-cuts over a distance of 237 feet and a difference in elevation of 25, 35, 45, and 85 feet respectively. The vein varied in width from 2 feet to 4 inches in the tunnel and open-cuts.

Development, 1926.

Development-work on the *Cascade* group in 1926 consisted of widening part of the No. 2 crosscut tunnel and driving No. 3 crosscut tunnel 80 feet. No. 3 tunnel was started at an elevation of approximately 425 feet below and to the south of No. 2 tunnel (old crosscut). The size of this tunnel is 5½ by 7 feet and its objective is the downward extension of the main vein system developed in No. 1 and No. 2 tunnels. Practically no development was done on the *Blue Bell* claim in 1926, other than facing up and timbering the mouth of a new tunnel. All work was generally retarded by snow from 3 to 7 feet deep, as the roads were filled and in places made impassable with drifted snow. These weather conditions may generally be looked for between December and March in that locality. Work in the mines did not get fairly under way until January 1st, 1927. At present trucks are running, with the aid of snow-ploughs, between Tulameen and Kelly creek, and from there to the mine 4-horse sleighs are being used to transport fuel-oil and supplies.

Construction, etc.

Active operations during 1926 commenced towards the latter part of September and most of the remainder of the year was spent in establishing camps before winter set in. This constituted excavating, cribbing, and levelling a location for a permanent camp on the *Cascade* group of claims, establishing a half-way camp at Kelly creek, and hauling in lumber and supplies. Rainy weather prevailed during these operations and the new road between Sutter creek and Summit camp, which had not had sufficient time to pack, became a quagmire and almost impassable. The camp on the *Cascade* group consists of an office and store-room, 30 by 18 feet; a cook-house, 18 by 32 feet; a bunk-house, 18 by 40 feet, with a 12-foot shed between; two cabins, 16 by 20 feet, with a 10-foot room between (the old double log cabin moved down and rebuilt); a blacksmith's shop, 18 by 20 feet; an engine-room and machine-shop, 22 by 37 feet; a dry, 18 by 26 feet, with lockers for each man; a barn and stable, 16 by 30 feet; a powder-house, 18 by 20 feet, made of logs; root-house, 16 by 18 feet. Nearly all these buildings are double-boarded and sheeted for protection against the prevailing wind in winter.

Construction on the *Blue Bell* claim comprises an engine-room and machine-shop, 16 by 24 feet; a cook-house, 12 by 12 feet; a bunk-house, 16 by 26 feet; and a powder-house 12 by 12 feet, all double-boarded.

A hot-water heating plant with radiators in each building and hot- and cold-water system has been installed at the *Cascade* camp. Two water-storage dams have been built on the small creek flowing from Treasure mountain and a 2-inch water-main from the lower dam to the camp. All the water and air lines have been buried 3 feet underground for protection against frost. Fuel-oil of 26° gravity is stored in a 10,500-gallon tank at the mine and another tank of similar capacity at Tulameen Station. Consumption of oil at present amounts to about 24 gallons in an eight-hour shift. The cost of this oil is 8 cents a gallon laid down at Tulameen.

Machinery installed on the *Cascade* group consists of one 10- by 12-inch Ingersoll-Rand compressor; one Scandia-Verken engine, 80 horse-power, 325 r.p.m.; one 6-foot receiver; one Robinhood hot-water system furnace and boiler; one Rand steel-sharpener and temper-muffle. About 1,500 feet of 1-inch pipe has been laid and buried to supply the mine and camp with water. Three thousand feet of 12-lb. rails, six mine-cars, two Dreadnaught, one Sullivan, two No. 70 machine-drills, six jack-hammers and four stopers for use in the mine, 1,000 feet of ½-inch steel cable and drum for aerial tram from No. 2 tunnel to camp to transport steel and supplies, and one 1-ton Federal truck have been purchased. At the *Blue Bell* mine there is one 25-horse-power

373-r.p.m. Scandia-Verken oil-engine, one 9- by 8-inch 320-r.p.m. Sullivan compressor, and one Wonder pump to supply water to the camp and mine. A road about 1 mile long was built below the camp to permit hauling in timber for mining, and about three-quarters of a mile of main road diversion was made between Sutter creek and the mine to avoid swamps created by the heavy autumn rains.

Sampling and Values.

Many samples have been taken from different parts of the Cascade Consolidated property from time to time. These samples assay from 0.30 to 156 oz. in silver to the ton, 0.80 to 56 per cent. in lead, and 2 to 26 per cent. in zinc. The high silver values are found in the pure galena, which is generally intimately mixed with sphalerite, although both minerals occur separately. Several attempts have been made to average the values from samples taken both in No. 1 and No. 2 tunnels 400 feet apart, but these may as well be discarded until the ore-bodies are blocked out and a few tons of ore shipped for either direct smelting or a preliminary mill test. The gangue minerals are quartz, calcite, and ankerite. The ore-shoots strike in a north-easterly and south-westerly direction and dip at a high angle to the south-east. The rake of the ore-shoots appears to be to the north-east.

Samples taken from the *Blue Bell* vein assayed from a trace to 0.02 oz. in gold; from 2.5 to 23 oz. in silver to the ton; from 2 to 8 per cent. in lead; and from 4 to 14 per cent. in zinc. These were average samples taken from the tunnel and open-cuts mentioned under former development.

Expenditure.

The amounts expended during 1926 on the Cascade Consolidated Silver Mining Company, Limited, properties are as follows: Construction, $6,413; wages, $19,346 (no salaries included); machinery and equipment, $36,676; development, $3,237; or a total of $65,672. On the *Blue Bell* (Capital Mining Company) construction and development cost is included in the Cascade Consolidated Silver Mining Company's expenditure and is not a very heavy item; wages, $633; machinery and equipment, $1,091; or a total of $1,724. Transportation costs have not been itemized and are probably included in the above totals.

Geology.

The following is an extract from the Summary Report, 1922, Part A, Geological Survey of Canada, by C. E. Cairnes, pages 106A and 107A. The Lower Cretaceous and the Dewdney series that are mentioned include a succession of sedimentary and volcanic rocks, including conglomorates, arkose, tuffs, argillites, and andesite.

"The ore-deposits at Summit camp occur at a number of widely separate points and under a variety of geological associations. There is, however, a rather remarkable uniformity in the character of the ore-bodies at the different showings, a uniformity embracing not only their physical but also their mineralogical characteristics. At each property the ore occurs in veins rarely over a few inches wide, but which may fall within a wider and more sparsely mineralized zone containing other such veins. The entire zone of mineralization constitutes the potential ore-body. It may have a width of several feet, and the whole of it, in at least certain cases, constitutes concentrating-ore. On examination it is found that the mineralized veins are following either lines of fracture or of movement, and that, depending upon the character of the rock traversed, there is some replacement of the wall-rock by mineralizing solutions. The most abundant ore-minerals are galena and sphalerite. They commonly occur in nearly equal proportions, but either may be present almost to the exclusion of the other. The galena is commonly coarsely crystalline and assays of the pure sulphide run between 150 and 600 oz. in silver. Polished specimens of the galena show that the silver values occur as argentite minutely disseminated through the lead sulphide. No argentite or other silver mineral was observed in the sphalerite. This zinc sulphide is dark, lustrous, and either coarsely crystalline or massive, and, underground, is sometimes difficult to distinguish from the lead sulphide. Following these minerals, pyrite is probably the most abundant metallic constituent and with it may be associated the small gold values, usually under a dollar to the ton.

"The ore veins extend indifferently across the strike of both Lower Cretaceous and the Dewdney series. They also follow lines of fracturing or faulting involving the basic hornblende

lamprophyre sills that intersect the Dewdney rocks, and consequently belong to a later period than these intrusives—a deduction which supports the view that these sills are Pre-Lower Cretaceous, for they have nowhere been observed to intersect those sediments assigned to this period. The ore-bearing fissures, however, do not appear to cross the feldspar-porphyry dykes which include the Lower Cretaceous rocks, but may, as in the case of the ore-showings on the *Silver Chief* claim, follow either wall of these dykes. The dykes appear, in certain cases at least, either to follow lines of weakness in the sediments they intrude or to be themselves the immediate cause of the fracturing of the rocks in their vicinity. The ore is regarded as being derived either from the great body of Eagle granodiorite to the east of Treasure mountain or from the smaller bodies of quartz diorite occurring near the main divide at the head of Amberty and Sutter creeks and also near the headwaters of Dewdney creek on the western slope of the divide. The greater abundance of ore veins in the direction of this divide, rather than towards the east, favours this quartz diorite as being the principal source of the ore, a theory strengthened by observation of the very noticeable pyritic mineralization of the older formations almost everywhere in the vicinity of this intrusive.

"The order of deposition of the ore and gangue minerals is to some extent variable. The gangue is commonly composed of quartz and calcite, but ankerite and stilbite have been observed. These gangue minerals tend to form along the walls of the fissures, leaving the more central portion to be filled, subsequently, chiefly by the ore-minerals, of which the most important are galena and sphalerite. Chalcopyrite is sometimes a conspicuous vein-mineral and appears to have been the last sulphide precipitated. Pyrrhotite and pyrite also are locally abundant, and not only occur within the fissure deposits, but commonly impregnate the wall-rock on either side or may be found disseminated through the rock formation far from any fissure deposit. Both of these iron sulphides precede the galena and chalcopyrite, but in one instance at least the zinc-blende was observed to be intersected by veinlets of pyrite. Arsenopyrite is noticeably abundant in certain of the properties and appears to precede the lead and copper sulphides. Its order with respect to the iron sulphides is less certain. There is, probably, however, much overlapping of all the ore-minerals, but the order in which they each begin to precipitate seems to be pyrrhotite, pyrite, sphalerite, arsenopyrite, tetrahedrite, galena, chalcopyrite.

"The association of ore and gangue minerals at Summit camp and the character of the ore-deposits suggest that the solutions from which these minerals were precipitated were of intermediate or in the case of some of the properties possibly of high temperature, and that, consequently, the source of these solutions was at no great distance from the ore-bodies. It has been shown that the quartz-diorite intrusive bodies near the main divide afford the most likely source for the mineralizing solutions, and in this connection it is of interest to note that near these intrusives, and within the zone of contact metamorphism, the older formation is heavily impregnated with pyrite and, to a less extent, pyrrhotite and magnetite, but does not include the other ore-minerals so common in the fissure-veins at a greater distance from the intrusives."

Eureka. This claim adjoins the *Whynot Fraction*, which in turn adjoins the *Mary E.* claim, owned by the Cascade Consolidated Mines. A. Jensen *et al.*, of Tulameen, owners of the *Eureka*, financed, with the aid of outside capital, Lynden Mining Syndicate, development-work during 1926 and 23 tons of silver-lead ore was shipped to the smelter. Development in the second tunnel up to August 22nd amounted to about 65 feet of drifting, mostly on a fault. At a point about 12 feet from the mouth of the tunnel to the west a short piece of vein-matter about 4 inches wide, containing galena and sphalerite in a gangue of quartz and calcite, was found. Several pieces of ore of a similar nature were found in the drag of the fault. At the end of the tunnel the vein, about 12 inches wide, was struck and from all appearances was in place. The strike of this ore is in a general north-easterly direction and the strike of the fault about N. 22° W. (mag.). A narrow porphyry dyke about 4½ feet in width and striking N. 40° E. (mag.) cuts through the sedimentary rocks a short distance north of the No. 2 tunnel.

In the upper workings, consisting of a short tunnel and open-cuts, a great deal of mineralization occurs, including galena and zinc-blende, and it seems likely that the mineralization fissure follows the walls of this dyke in a similar way to the veins on the *Mary E.* claim. A sample taken from some of the sacked ore from this tunnel assayed 0.02 oz. in gold, 49.5 oz. in silver to the ton, 30 per cent. lead, and 12 per cent. zinc. Other much higher-grade samples have been

taken from the workings in the No. 2 tunnel. The assays from the shipment made to the smelter will undoubtedly give a true average value of the ore. The lower workings have been mentioned in the Summary Report, 1922, Part A, of the Geological Survey of Canada.

Tulameen River Section.

A discovery of quartz containing free gold was made along the east bank of the Tulameen river, a short distance below Eagle creek, by Wm. Britten, of Tulameen. An examination was made of this discovery, but unfortunately the owner was absent and nothing but narrow quartz stringers entirely unmineralized could be located. Specimens of ore said to have come from this find showed large quantities of free gold mixed with the oxidized quartz.

Liverpool. This claim, owned by Louis Marcotte, of Coalmont, was reported on in the Annual Report for 1922. Since that time the shaft-tunnel has been driven ahead about 110 feet. From the foot-wall of the collar of the inclined shaft to a point 66 feet within the tunnel the limestone is almost entirely replaced by silica impregnated with pyrite, pyrrhotite, and chalcopyrite, with malachite in the fractures. Two porphyry dykes, one about 9 feet and the other about 12 feet in width, cut the formation at right angles to each other beyond this zone containing copper. The limestone between the dykes is only slightly mineralized with pyrite. At a point within 15 feet from the face of the tunnel on the right-hand side a few specks of galena and small lenses of zinc-blende were found. The face of the tunnel is in schist, which dips about 40° S.W. and strikes N. 24° W. (mag.). The character of the ore appeared to be lower grade than that developed in the shaft—that is, 1.2 oz. in silver to the ton and 3 per cent. copper—but this may improve in depth as it did in the shaft. The size of the zone is an attractive feature. To develop this ore-body it will be necessary to sink.

Silver Bell and Belmont. These claims are situated about 2 miles up Kelly creek from its junction with the Tulameen river. The owner, B. Marks, of Tulameen, extended the development, done several years ago by J. Kelly (now deceased), on a quartz lead near the bed of the creek. An excessive amount of water during sinking operations prohibited further work being done. It is the intention of the owners to sink beyond the creek-bank and drift towards the lead. Picked samples from this lead assayed 0.06 oz. in gold, 30.5 oz. in silver to the ton, and 1.2 per cent. lead. A small percentage of tetrahedrite is noticeable in this ore, associated with galena and pyrite. The width of the vein varies from 2 to 12 inches. The country-rock is schist.

Placer-mining.

The results of placer-mining on the Tulameen river have again been disappointing as far as actual production of the platinum metals and gold are concerned. A lot of exploratory work was done at Slate creek, but owing to unforeseen difficulties, such as beds of glacial clay 20 feet thick lying close to bed-rock, the average value of the bed-rock gravels could not be demonstrated before low water.

A spectacular find was made by Garnet Sootheran on his placer lease about half a mile below Eagle creek, on the west side of the Tulameen river. Higher up the river other work was done later by other interests, but from local information received the results were said to be disappointing. A more detailed account of the Sootheran lease is incorporated in this report. On the Similkameen river above Princeton more attractive preliminary results were obtained by the Tulameen Gold and Platinum Recovery Company, Limited.

The Department of Mines found it necessary from time to time to stop the publication of some rather too optimistic statements in some of the prospectuses issued by stock-promotion companies.

For about the first time in the history of production in this area the placer-miners have been paid for all the metals of the platinum group contained in the clean-up. This was accomplished by sending the crude platinum, generally through the local banks, to Johnson & Son's Smelting Works, Limited, refiners and dealers in the precious metals, 27–33 Paul Street, Finsbury, London, E.C. 2, England. To illustrate the difference the following returns are submitted:—

Date, September 3rd, 1925. Platinum concentrates weighing 5 oz. troy sent to Johnson & Son, London, England.

		£	s.	d.		£	s.	d.
Fine gold	0.152 oz. at	4	4	9	an ounce amounts to	0	17	11
Platinum	2.590 oz. at	24	0	0	an ounce amounts to	62	3	2
Iridium	0.686 oz. at	75	0	0	an ounce amounts to	51	9	0
Osmium	0.292 oz. at	22	0	0	an ounce amounts to	6	8	6
Ruthenium	0.310 oz. at	11	0	0	an ounce amounts to	3	8	2
Rhodium	0.260 oz. at	17	0	0	an ounce amounts to	4	8	5
Total	4.290 oz. paid					128	15	2
Less refining at 15s. an ounce						3	15	0
Total to producer						125	0	2

If all the metal, minus 0.152 oz. troy in gold, had been paid for as usual at platinum prices, and the pound sterling figured at $5, the loss to the producer would have been roughly $124. As long as the price of iridium remained high the miner lost a considerable amount. At the present time the price of iridium is only slightly higher than that of platinum and the difference is negligible. The combination iridio-platinum, quoted at a higher price, is a chemical one and used as a specialized article. The natural alloy found in the placer-diggings cannot be used satisfactorily in its original state, because it contains impurities which render it unsuitable for commercial purposes. The platinum and iridium are therefore separated and paid for as such and chemically combined afterwards. Quotations have been received from Johnson & Son, London, stating that the cost of smelting black sands is £19 a ton.

Sootheran Leases.

Garnet Sootheran owns one river and two bench leases on the Tulameen river, approximately half a mile below Eagle creek. His partner, J. Hamilton, owns the adjoining lease up-stream. The Sootheran lease (No. 153) includes what is known as the *Deadhorse* claim, worked many years ago. During May and June the two partners whilst working together a short distance below Champion Creek bridge discovered a pay-streak along the side of and under the boulder-dumps of some old placer-diggings. Practically no work was done to demonstrate the thickness of this pay-streak or its area, chiefly on account of the piles of small boulders on top of it. Between May 17th and June 22nd 35 crude troy ounces of platinum was taken out from short narrow drains and open-cuts spotted over an area of about 200 feet. According to the owner, this amount of platinum was recovered from 736 partially filled small wheelbarrows, and he estimated that fifteen full barrows represented 1 cubic yard of gravel; so that the 35 crude troy ounces of platinum represents the production from anywhere between 24 and 49 cubic yards. The pay-streak appears to be an iron-stained partially cemented gravel of unknown thickness. Bed-rock had not been tested under this gravel at the time of examination (July 3rd, 1926) except around the rim, where it showed a decided dip down under the old workings.

Two theories are offered as an explanation of this find, since it occurred in an old placer-diggings; one is that the former miners cleaned up all the values, which were thought to be mostly gold, down to the cemented gravel or false bed-rock mentioned above and left everything below because the values were mostly in platinum valued, then, at only a few dollars an ounce; the second theory is that the platinum found is the discard from the former miners' sluice-boxes, which seems unlikely, because, as a general rule, only the coarse platinum was thrown out of the boxes and the final separation took place at the cabins.

The cost of placer-mining in the early days on the Tulameen was very high on account of lack of transportation of any kind. The width of the bench on which the old channel is located is between 300 and 350 feet at the widest part and approximately 2,500 feet long. Owing to the mountain-slides it is very difficult to estimate the width of the old channel and there may be other higher channels filled with debris under the present wagon-road. Cleaning away the piles of loose boulders offers no serious hindrance to the exploration of the bed-rock gravels, and with such high values in platinum obtainable it is difficult to understand why the lease is lying idle. Water for mining can either be obtained from Eagle creek, half a mile distant, or from the Tulameen river. Bed-rock appears to be about 6 feet above the present river, but this

is not at all certain. A sniper permitted to work on the lease for a week or two whilst the owners were awaiting information regarding a deal cleaned up about $10 a day.

Tulameen Placer Mining Co., Ltd.

This company was incorporated on October 14th, 1926, with offices in the Board of Trade Building, Vancouver. The authorized capital of the company is 500,000 shares of $1 each. No fiscal agent is permitted to receive more than 35 per cent. commission on sales of shares. Fifty per cent. of the value of each share is to be paid for on application and the balance upon allotment, or in four monthly instalments if agreed upon by the directors. The following are the directors: R. D. Davies, J. McD. Grosart, L. J. Cooper, A. E. Perman, and J. P. Tait.

The ten leases being acquired from J. McD. Grosart for a consideration of 150,000 fully paid-up shares of the company, are situated on the Tulameen river between Slate creek and Collins gulch and consist of six creek leases and four bench leases having a total area of 488 acres.

Although the ground acquired is favourably located down-stream from Olivine mountain, which is the acknowledged source of the placer platinum, the company will be well advised to avail itself of the experience of other operators and thoroughly test the ground before installing expensive machinery. Where thorough testing operations of the gravels of the Tulameen river have been carried on, the values have been found concentrated along certain well-defined channels and not all through the gravels.

Similkameen Placer Syndicate.

This syndicate, mentioned in the 1925 Annual Report, continued development under the direction of Norman McCormick throughout most of the season on Slate creek. The tunnel commenced in 1925 broke through under the present channel of Slate creek above the upper falls. Owing to a bed of glacial clay about 20 feet thick lying just above bed-rock, work was greatly retarded and it was found necessary to blast a channel through the clay in order to reach that part of the channel which was the objective. Before this was done the water in the creek lowered to such an extent that operations ceased for the season. A good flow of water is necessary to carry off the debris blasted from the workings.

The same syndicate drove a tunnel into the high cut-bank below the mouth of Slate creek in an effort to locate the mouth of the old channel, which is supposed to have been blocked by glaciers. Several hundred feet of tunnel, with two branches radiating from it, have been driven and bed-rock located in all three drifts. At the time of examination (July 3rd) the rock encountered dipped in several directions and it was difficult to predict in which of the three tunnels the old channel might lie. Further work has been done and according to the management the prospects look encouraging. Owing to the impossibility of estimating the right elevation to drive a tunnel to strike bed-rock it may be necessary to sink or to raise to reach the old channel, if there is one. A camp has been built near the mouth of Slate creek.

Ruby Lease.

This lease, situated about 4 miles below Coalmont, is owned by K. Ruby, of Coalmont. Most of the season was spent in building a dam and pipe-line to furnish water for hydraulic mining. Owing to a dry season very little could be done after July. This lease covers what is known as the old Roney high-channel lease, which produced a lot of gold in past years. The elevation of this channel is about 100 feet above the present bed of the Tulameen river. There appears to be a considerable yardage of likely-looking gravel on the east end of the claim which the owner intends working. A total of 25 oz. in gold and 9 oz. in platinum was recovered.

Tahoma Recovery Co.

This syndicate, capitalized for $25,000 and composed of Tacoma, Wash., capital, leased some placer-ground at the mouth of Granite creek and installed a steam-shovel of 1½-yard capacity and a portable sluice-box, including gravel-storage bin, etc., to operate on rails. As it was necessary to commence digging-in operations at the Tulameen river bank, the area supposed to contain pay-gravel was not reached before the freeze-up. Operations, consisting of unloading machinery and construction of portable sluice-boxes, etc., did not start until July 12th and it was late in August before the actual work began. About 300 feet of new channel was dug and 5,000 yards of gravel washed, with only a small recovery, as expected. No work was done during October on account of boiler-trouble.

Granite Creek.

Granite creek, discovered in 1885, produced during five years, on an average, $5,000 for every 100 feet of ground over a distance of 3¾ miles. Most of the ground worked was confined in the

narrow rock-walled canyon through which the creek flows. The gravels varied in depth from 2 to 8 feet, with most of the pay-dirt on bed-rock, so that they were easily worked. At the present time there are several leasers working the benches along the creek who are making a little better than wages during the season.

Granite Basin Mining Syndicate.

This syndicate, with offices in the Dominion Bank Building, Vancouver, operated a lease in Granite basin. This basin constitutes a widening of the valley beyond the canyon on the South fork of Granite creek about 6 miles from its outlet. A branch road leaves the Coalmont–Blackburn wagon-road about 3¾ miles from Coalmont and extends as far as the North fork of Granite creek. This branch road is not safe for automobiles much beyond Johnson's cabin. From the North fork a narrow and often precipitous trail extends across Newton creek and up the South fork of Granite creek.

A shaft has been sunk 42 feet deep on a bench 6 feet in elevation above the creek and a short distance south of the mouth of the canyon. No alluvial gravel was reached in this shaft and the operators were driven out by the excess of water. Two gasolene-driven pumps were installed, and according to the management the larger pump had too great a capacity for the work on hand and the smaller one had insufficient power.

Many years previous an 800-foot tunnel was driven from the canyon below with the idea of exploring the gravels in the bottom of the basin. Most of this tunnel was in solid rock except at the upper end, where it had caved in from the surface. No data are at hand regarding the results obtained from this work, but it is probable that the tunnel was not driven at a low enough elevation. Bed-rock has never been reached in this basin and it is a matter of conjecture whether there are any values in it. The best way to prospect the area would be with an Empire drill, which could be brought in over the present trail. This drill is not as rapid in gravels containing boulders as the engine-driven machines, such as the Star or Keystone, but owing to transportation difficulties it will suit the purpose. The heaviest part weighs 250 lb.

Andrew Gordon Lease.

Andrew Gordon, of Coalmont, owns two creek leases on the South fork of Granite creek below the basin. His first lease commences 200 feet above the North fork of Granite creek and extends up-stream past the mouth of Newton creek. Both leases are located in a steep canyon and cover ground that has been worked (Lambert lease) or has had some development-work done upon it.

At the time of examination A. Gordon and partner were prospecting some shallow ground on the east side of the creek and were getting a few colours. This work was only temporary and the owners hoped to interest capital to the extent of obtaining sufficient money to clear out the old 330-foot tunnel flume in the box canyon and extend the present bed-rock flume (now 1,100 feet long) higher up the channel into virgin ground below the dam. The prospect of getting values appears to be good, if records are correct.

The present owner has also driven a tunnel 200 feet on bed-rock into a gravel bench which projects about 300 feet out into the creek and which evidently caused a diversion in the stream. Evidence of an old channel is developed by other tunnels in the bench higher up the creek. Some gold nuggets were taken out of the lower tunnel, but it has not been driven far enough to reach the old channel proper. This seems to be the most favourable location to do development-work.

At the junction of Newton creek and the South fork of Granite creek much gold and platinum was recovered during the boom between 1885 and 1890. This area lies up-stream from the bench referred to above.

National Holdings, Ltd.

This company operated in a small way during part of the season on its lease 4 miles above Princeton and closed down early in the autumn. A small quantity of gold and platinum was recovered, but as a whole the operation was unsuccessful owing chiefly to the mistake of installing a plant before thorough preliminary investigations had been made. Prospects found by panning on parts of these leases were fairly promising and justified further development, either by shaft-sinking or drilling, but nothing more. The upper leases on Petersen flats have had nothing but a few shallow pits dug in them, from which attractive colours in gold and platinum have been panned. These flats are, it is understood, under lease to a different organization, which intends to prospect

them thoroughly. A full description of the plant and intentions of the National Holdings Company appears in the Annual Report for 1925.

Similkameen River Section.

Tulameen Gold and Platinum Recovery Co., Ltd.

Although this company bears the name of Tulameen and some of its exploration-work was done on what is thought to be an old high channel of that river, the major development took place on a bench on the Similkameen river and is therefore related under this heading. This company was incorporated on May 10th, 1926, with offices in the Dominion Bank Building, Vancouver, and an authorized capital of $2,500,000, divided into 2,500,000 shares of $1 each. The directors of the company are Norman McCormick, Arthur R. Jenni, Alvin Stanlake, James Saborne, and Etna M. Morgan, of Vancouver. The property, purchased by the company from Norman McCormick and Etna M. Morgan, of Vancouver, for 675,000 shares to each, consists of fifteen placer-mining leases situated between the Tulameen and Similkameen rivers, commencing at a point about 4½ miles up the Tulameen and cutting across to a point about 4 miles up the Similkameen river above Princeton. The leases follow a series of terraces and depressions at an elevation of approximately 500 feet above the Tulameen river and cover what is supposed to be an old high channel. The reason for this supposition is that colours of platinum and gold have been panned from shallow holes from several different localities on these leases and the gravels have the appearance of partially assorted alluvial material.

One shaft, over 100 feet deep, was sunk at the north-west end of the leases near the Tulameen river. This shaft was not examined, but the management said that only spasmodic values were found before the work had to close down on account of the cold weather freezing the camp water system. If there is an old channel cutting through the section described above, the surest and most economical way to find the entrance is by prospecting along the banks of the Tulameen river. The leases of this company did not extend far enough toward the Tulameen river to carry out this development scheme during the earlier part of 1926. In the autumn more ground was acquired which will enable them to do this work. The following excerpt from the Preliminary Report on a part of the Similkameen District by Chas. Camsell, Geological Survey of Canada, 1907, page 21, throws some light on the subject:—

"Numbers of terraces and deposits of gravel also occur at various elevations on the sides of the valleys to a height of 3,400 feet above sea-level. The higher ones of these appear to have been formed when the whole valley was filled with water up to these levels, while others nearer the river and lower are the results of the action of the present streams in cutting down their beds. As a rule the higher ones only now occur as small remnants of once more extensive terraces, formed in the period immediately following on the disappearance of the Cordilleran glacier, and which have since been reduced in size by the ordinary atmospheric agencies of erosion. These are the most apparent evidences of comparatively recent changes of level.

"Accompanying these changes of level, and either a direct result of them or of the blocking of ancient channels by recent volcanic flows, have been some striking changes of drainage. The most marked instance of this is the deep valley of Smelter lake and Wolf creek, now occupied by a stream inconsistent with the size of the valley. It seems probable that this valley of Wolf creek, with its continuation through Smelter lake, once carried a great part of the drainage of the southern portion of the Similkameen river, but that the filling-up of parts of its channel by recent volcanic flows, or the same uplift which caused the southern portion of the Similkameen river to cut its deep canyon, also forced the stream into its present roundabout course through the Tertiary basin about Princeton. All the streams entering this valley from the south, above and including the Coldwater river itself, occupy hanging valleys, so that they debouch in waterfalls or have been forced to cut deep canyons down to the level of the trunk valley."

The recent volcanic flows and intrusive rocks are plainly exposed at the west end of this area. If this is an old channel, as supposed, in which the entire Tulameen river flowed, there is a distinct probability that these rocks caused an entire or partial change of drainage. Whether or not these old high channels had a sufficiently strong flow of water through them to concentrate the metallic values can be discovered only by exploration. The shaft sunk by this company encountered a great deal of glacial material which probably filled in any depressions. Since there are no known platinum-bearing rocks within about 10 miles of this area, it appears

Slate Creek Placers, Similkameen M.D.

Granite Creek Placers, Similkameen M.D.

more than likely that the values in the gravels are of glacial origin. Roads and a camp were built close to the west end of this company's holdings to facilitate the work on hand.

The Similkameen River leases (Nos. 353–355) are located near the mouth of Bromley creek at the east end of the area. A part of these leases, on which most of the work was done, consists of a bench about three-quarters of a mile long and about 400 feet wide at the widest part and 6 feet above low water. At the north and south end there are indications of old placer-diggings, and history relates that a good deal of gold was recovered from them forty years ago, but that there was too much water for the old miners to work to bed-rock with the equipment at their disposal. In between these old workings this company put down shafts, test-pits, and drains in an attempt to reach bed-rock. Two or three of these shafts, out of a total of thirteen, reached bed-rock, and in the others the work had to be stopped on account of an excess of water, and the attempt was abandoned. Therefore no positive data were obtained regarding the total yardage or values in this area.

Colours of gold and platinum were found in most of the shafts as far as they went. The depths of the shafts, where measured, varied from 6 to 9 feet. Other shafts were sunk deeper, according to the management, but as these were full of water at the time of examination the depths could not be checked nor the gravels panned. At least 50 per cent. of the gravel at the upper or south end of the lease is small boulders, so that in figuring the possible yardage an allowance must be made for this. Where a section of a shaft where bed-rock was exposed was sampled and panned higher values were obtained; so it seems probable that the pay-gravel lies either on or close to bed-rock.

A part of this bench at the mouth of Bromley creek was inhabited by beavers and several long dams had been built. The company found it necessary to cut these dams and dig long drains to draw off the water, so that it could prospect the ground. Prospects of gold were found in the drains and in open-cuts along the river-bank. The area as a whole seems to have possibilities of producing gold and platinum at a profit to the operator providing the ground will average 50 cents a cubic yard or better.

A steam or electric shovel or drag-line scraper, or both, will probably be used, depending on the character and depth of the bench-gravels. On November 10th the management were having plans of an electric shovel and it was their intention to have the different parts made and assembled during the winter months ready for construction on the ground in the spring.

Bromley creek is from 6 to 10 feet in width and is a steady-flowing stream. Light porous colours of gold are found in the surface residue brought down by this creek, and because the direction of the stream is diagonally across the supposed old high channel of the Tulameen river these colours are believed to have come from the channel gravels.

In summing up the situation as it stood at the end of 1926, the following are the main facts and theories: The company believed that there is an ancient high, blocked channel of the Tulameen river situated somewhere in the depressions about 4 miles in a south-westerly direction from Princeton. The geology and topography of the country in that neighbourhood supports this theory to some extent. Colours of gold and platinum, although found only at irregular intervals, adds to the possibilities of the theory. It is also believed possible that there has been a sufficient concentration at the bottom of this old channel and perhaps over a larger area to warrant its exploration. The one shaft, sunk over 100 feet in depth, has bed-rock as its objective and crosscut tunnels should be run each way across the channel or depression in an endeavour to gather information before doing more work.

On the Similkameen River bench it was considered possible to gather sufficient data for future operations by sinking a series of shafts to bed-rock and panning each foot of the work. An excessive flow of water, which the pumps were unable to handle, stopped this work, and although insufficient data were procured to warrant any large outlay of money, the results were sufficiently attractive to justify further exploration. A churn-drill is the only mechanical device that will test gravels immersed in water, but because there has been a wide variance at times in values found by churn-drills and by ultimate operations the management was inclined to be prejudiced against them. Assertions have been made by this company that it had 100 acres of gravel carrying $2 a yard in gold and platinum (metallics). It is possible that there is this gross content in the bench-gravels on its leases on the Similkameen river, and perhaps more, but it had not been proven at the time of examination (November 10th, 1926).

Platinum Production.

It is almost impossible to obtain the correct total production of platinum from placer operations in this district because there are so many different ways of disposing of the metal. Some of it passes through the local banks, some through the local storekeepers, and other amounts are sent direct to the metal-buyers in different parts of the country. Roughly, 50 oz. of metal has been sold and paid for as platinum. Most of the larger platinum nuggets recovered from the Garnet Sootheran lease were taken to Vancouver for display and there is no record of them being sold.

Coal.

During the year the Princeton-B.C. Colliery Company, Limited, ceased operations on its property at Princeton after many years of production. No official information is to hand regarding the future plans or what is to be done with the assets of this company. It is generally believed that there is still a large tonnage of lignite coal on the properties owned at Princeton.

The Tulameen Valley Coal Company continued operations throughout the year and a considerable amount of coal was shipped to outside points as well as for local consumption.

Diamond-drilling and later some drifting was done on the Robert Schulli coal prospects lying about 2 miles south-west of Princeton by W. R. Wilson *et al.* under the superintendency of Ridgeway Wilson, of Victoria. Coal was struck by the diamond-drills, but information regarding other development-work is not to hand.

EASTERN MINERAL SURVEY DISTRICT (No. 5).

By A. G. Langley, Resident Mining Engineer.
(Reports marked * are by B. T. O'Grady, Assistant.)

INTRODUCTORY.

This district comprises the Revelstoke, Lardeau, Trout Lake, Slocan, Slocan City, Ainsworth, Nelson, Trail Creek, Arrow Lake, Golden, Windermere, and Fort Steele Mining Divisions. It is responsible for the great bulk of silver-lead-zinc ore produced in Canada; in fact, the amount of lead and zinc produced in other parts of the Dominion is insignificant as compared to the output of this district. In this connection it is very gratifying to note that its production has shown a steady and substantial increase during recent years, with good prospects for a still greater output in the near future. This very healthy condition of affairs has been principally due to the phenomenal success of the Consolidated Mining and Smelting Company in the development of the *Sullivan* mine and the treatment of the complex ores found therein. The keen demand for silver-lead-zinc properties brought about by satisfactory marketing conditions and the ever-increasing output of these metals by the Trail smelter have naturally attracted the attention of mining men to this district, with the result that a number of properties have been acquired by strong interests and considerable capital has been available for the development of properties of merit.

This year has witnessed a very substantial increase in the tonnage of custom ores shipped to Trail, which is principally due to the acceptance of milling-grade ore for concentration by the Consolidated Mining and Smelting Company. The list of shippers from this district contains sixty-five names and includes five properties which have produced over 15,000 tons each—namely, the *Silversmith*, *Bluebell*, *Lucky Jim*, *Stemwinder*, and *Yankee Girl*.

New Developments and Exploration.

Generally speaking, there has been a marked increase in activities throughout the district, both at the mines and prospects. In the Nelson Division the reopening of the *Yankee Girl* under the management of W. G. Norrie, the development of the *Goodenough* by the Porcupine Goldfields Development and Finance Company, together with several minor operations up Porcupine creek, gave a new lease of life to the Ymir camp. Great interest was caused by the exploration-work being undertaken by the Victoria Syndicate at the *H.B.* on Sheep creek and in the Pend d'Oreille area, where large low-grade lead-zinc replacement deposits in limestone were tested by diamond-drilling followed by underground work.

In the Slocan-Ainsworth district the output of the Sandon and Silverton camps was well maintained, while the increased output of the *Lucky Jim*, *Whitewater*, *McAllister*, and *Bluebell* gave a substantial boost to the production of this area. Exploration-work was actively carried on by the Victoria Syndicate on a large group of claims near Sandon and further development undertaken at the *Hewitt*, which was acquired by them during the year. The Porcupine Goldfields Development and Finance Company did some diamond-drilling at the *Galena Farm* and later acquired the *Mammoth* mine under option.

In the northerly part of West Kootenay the properties which probably attracted most attention were the *Teddy Glacier*, a new prospect with attractive possibilities, in which it is understood American capital has become interested, and the *Multiplex*, which produced a small tonnage of high-grade silver-lead ore. The development and exploration of the "Big Ledge" near Nakusp is also being watched with great interest.

In the East Kootenay important work was done at the *Monarch* near Field by A. B. Trites and associates, who also acquired the *Giant* at Spillimacheen. At this latter property systematic diamond-drilling disclosed favourable indications and underground work was undertaken during the latter part of the year.

Exploration at the *Ruth-Vermont* property on Vermont creek, in the Golden Mining Division, has been attended by very encouraging results. Late in the year a new sleigh-road was slashed out to the mine. The property was acquired by an English syndicate. In the Windermere Division the *Paradise* was acquired from the Hon. Robert Randolph Bruce by the Victoria

Syndicate and further development is being vigorously proceeded with. In the Fort Steele Division the *Stemwinder* entered the shipping-lists and, next to the *Sullivan*, was the largest producer in East Kootenay. The *Aurora*, which had been idle for many years, made a good showing soon after being reopened.

The above probably constitute the outstanding new developments of the season, although there are numerous others taking place, some of which may turn out to be very important, but in many cases not enough work has yet been done to allow a definite opinion to be formed as to the ultimate results. However, the general impression gained after visiting many properties, including prospects and producing mines, was that mining in the district is in a healthy condition and the future can be regarded with confidence, both in respect to increased production and exploration.

Summary of Important Construction-work.

At Kimberley additions to the *Sullivan* concentrator were made which have increased the capacity of this plant from 3,000 to 4,000 tons a day. At Moyie the Consolidated Mining and Smelting Company completed the erection of a 500-ton concentrator to treat the tailings of the old *St. Eugene* mill. At Riondel the *Bluebell* mill was remodelled and a dam built at Lake Fowler for water-storage purposes. Near Bonnington commencement has been made on the installation of 60,000-horse-power hydro-electric plant, and at Trail a great deal of new work was undertaken and accomplished, which is mentioned elsewhere in the report.

Prospecting.

As far as can be ascertained, prospecting activities throughout the district have been about the same as last year, but nothing very spectacular in the way of new discoveries has been reported. Owing to a number of forest fires prospecting and minor operations in certain parts of the district were severely handicapped during the month of August.

Geological Work.

The Geological Survey had a party headed by J. F. Walker and F. M. Bancroft engaged in the Trout Lake and Lardeau Mining Divisions and another headed by C. E. Cairnes in the Slocan area.

The writer wishes to acknowledge with many thanks the courtesies extended by the mine-owners and prospectors.

During the early part of July a mining convention was held at Nelson, which was well attended by visitors from Spokane and various parts of the Province. The programme provided ample opportunity for discussion on mining topics and entertainment for the visitors, while the excellent display of Kootenay ores could not fail to create a very favourable impression of the potentialities of the district.

In October the Canadian and American Institutes of Mining and Metallurgy held a joint meeting at Cranbrook and Kimberley. Among the large number of visitors were included many eminent men of the profession. An excellent opportunity to see the *Sullivan* mine and concentrator was afforded by the staff of the Consolidated Mining and Smelting Company, who did everything in their power to make the stay in Kimberley both interesting and enjoyable, while the Cranbrook Board of Trade added greatly to the success of the meeting by co-operating in making arrangements for the convenience of the members and entertaining them at a dinner on the night of their arrival.

EAST KOOTENAY.

The portion of the Eastern Mineral Survey District (No. 5) known as East Kootenay comprises the Golden, Windermere, and Fort Steele Mining Divisions and is responsible for the greater part of the production of silver, lead, and zinc of No. 5 District. The immense tonnage produced is from the *Sullivan* mine, which is supplemented to a comparatively small extent by the output of the *Stemwinder*, *Aurora*, and *Paradise* mines and a few small shippers.

The progressive policy being pursued by the large mining companies in respect to exploratory and examination work, coupled with the numerous activities of the small operators and prospectors, augurs well for the possibilities of establishing some new and important producers.

The most important mineral-deposits so far discovered in the East Kootenay are in the Pre-Cambrian sediments of the Purcell range. A notable feature in connection with the geology of the ore-bearing zones is the intrusion of dykes and sills of basic igneous rocks.

In the southern part of the district the famous deposits of the *Sullivan, St. Eugene, North Star,* and *Stemwinder* all occur in the Aldridge quartzites of Pre-Cambrian age in an area which has been subjected to the intrusion of igneous rocks as above mentioned. These Pre-Cambrian rocks, known as the Purcell series, have been correlated with the belt terrain of Idaho and Montana.

Throughout the Purcell range mineralization is widely scattered, there being hardly a creek on which some prospect has not been located, and it is only a matter of time when further development and exploration will disclose other important ore-bodies and entirely new discoveries will be made. Although mining has been carried on in the district for a number of years, prospecting has not been nearly so active as conditions would appear to warrant and large areas of practically unexplored territory still await the prospector.

Considering the great extent of the mineralization at the *Sullivan* mine, it does not seem unreasonable to suspect the presence of other important ore-bodies even at considerable distances from this phenomenal deposit, providing geological conditions are favourable. Fortunately part of the *Sullivan* ore-bodies outcropped, hence the discovery; but the great northern ore-body does not outcrop and nowhere on the surface are there indications that would allow the wildest imagination to picture the present huge dimensions of the underground workings. The logical conclusion to be drawn from the above would appear to be that any surface showing in the possible continuation of the mineralized zone should be worthy of careful attention from the prospector.

Geological References.

Memoir 76, G.S.C.: Geology of Cranbrook Map Area, by S. J. Schofield.
Memoir 148, G.S.C.: Geology & Mineral Deposits of Windermere Map Area, by J. F. Walker.
Memoir 55, G.S.C.: Geology of Field Map Area, by John A. Allan.

GOLDEN MINING DIVISION.

This Division, occupying the northerly portion of East Kootenay, has experienced more mining activity than for a number of years. In this connection it is very gratifying to note that important interests are directing their attention to the development and exploration of several well-known properties which have been lying idle for a number of years.

Monarch. This property, which is situated at Field, was acquired last year by the Pacific Mines Petroleum and Development Company, Limited, of Vancouver. A. W. Davis was in charge during the year. The development principally consisted of driving a 700-foot incline raise, 7 by 8½ feet, which now provides connection between the old and new workings. The installation of a 3-rail tram is contemplated in this raise to connect with an aerial tram to the mill, which will probably be built next year. The mill-site is in the Kicking Horse valley, near the main line of the Canadian Pacific Railway. For further reference *see* Annual Report for 1925.

Giant. This property was acquired under option by the Pacific Mines Petroleum and Development Company, Limited, during the summer. Surveying followed by diamond-drilling was undertaken, with results which are reported to have been highly satisfactory and sufficiently encouraging to warrant further development by tunnelling. A. W. Davis, who is in charge of the work, estimates from diamond-drill records a probable 15,000 tons assaying: Silver, 11 oz. to the ton; lead, 25 per cent.; and a probable 100,000 tons of low-grade ore. In the area prospected one drill is reported to have cut 8 feet of ore averaging: Silver, 18 oz. to the ton; lead, 35 per cent.; also a foot-wall streak having a width of 4 feet and assaying 6 oz. silver to the ton and 34 per cent. lead. A 600-foot crosscut is now being driven to tap this ore, from which, it is anticipated, shipments will be made in the spring.

Ruth-Vermont. This property, comprising a group of claims including the *Ruth, Minnie,* and *Charlotte,* was acquired during the year by the Galena Syndicate, in which British capital is interested, on the recommendation of G. W. Edwards, a mining engineer, who came out from London to look over the field in 1926. The claims are situated on Vermont creek, a tributary of the Spillimacheen river, and about 23 miles by trail from Carbonate Landing on the Columbia river.

When the property was last operated, a good many years ago, a winter sleigh-road was built from the mine to Wells Landing, some 8 miles farther up the Columbia. This old road, which has now become more or less obliterated, is not a practical route on account of long grades which cannot be avoided. The only feasible route appeared to be down the valleys of the South

and Middle forks of the Spillimacheen. Since visiting the property in September this latter route was chosen and according to recent reports a new sleigh-road will be cut through to connect with the mine by the end of the year. The length of haul to the railway at Spillimacheen will be approximately 32 miles. The mine cabins are situated in timber at an elevation of 5,650 feet and at a short distance from the workings, which are located in the rugged hillside rising abruptly for several thousand feet to the summit of the ridge.

Since the acquisition of the property development and exploratory work has been vigorously pursued with a crew of about seventeen men and it is intended to carry on underground work during the winter with a smaller crew.

The area examined appeared to occupy a fractured zone in which a number of veins had been exposed having a north-westerly strike and cutting the formation of slate and limestone at a steep angle. Development was being confined to two of these veins on which no previous work had been done. The old workings, from which a small tonnage of ore had been shipped many years ago, consisted mainly of a deep open-cut located farther to the west.

On the easterly or No. 1 vein there had been three tunnels driven, briefly described as follows: At an elevation of 6,400 feet the No. 1 tunnel had been driven on the vein for about 20 feet. The ore, consisting of galena, zinc-blende, and iron sulphides in a quartz gangue, outcrops at the portal of the tunnel and can be seen in the bluffs above. A sample taken across 20 inches at the portal of the tunnel gave the following returns: Gold, 0.22 oz.; silver, 50.78 oz. to the ton; lead, 43.8 per cent.; zinc, 10.1 per cent.

At an elevation of 6,350 feet the No. 2 tunnel had been driven on the vein for 26 feet in loose ground. The ore-streak here was narrow but the ore was of good grade, as indicated by a grab sample taken from a small pile of sorted ore, which gave the following returns: Gold, 0.06 oz.; silver, 88.56 oz. to the ton; lead, 63.4 per cent.; zinc, 4.1 per cent.

At an elevation of 6,200 feet the No. 3 tunnel has been driven on the vein for 60 feet, for which distance the ore is continuous along the roof of the drift and has an average width of from 10 to 12 inches. A sample taken across 10 inches assayed: Gold, 0.08 oz.; silver, 96.48 oz. to the ton; lead, 50.1 per cent.; and zinc, 7.5 per cent. The strike of the vein as determined in this tunnel was N. 35° W. and dip 75° to the south-west.

The No. 2 vein is similar in character to the No. 1 and had been explored by two short tunnels, which disclosed similar widths and character of ore. These two veins are well-defined fissures traceable over a vertical range of 500 feet. Ore was exposed at all the various workings and conditions appeared promising for continuity, but not sufficient drifting had been done to determine the length of the ore-shoots. While the width of ore was narrow, it is not unreasonable to expect that conditions in this respect might easily improve with further development, due to changes in the character of the wall-rock or to the influence of structural movements.

However, that which appealed to the writer as one of the most interesting features of the property was the disclosure in the face of an old tunnel (called the "Nelson" tunnel, elevation 6,100 feet) of a width of 3 feet of sulphide ore which appeared to be a replacement deposit conforming to the dip and strike of the enclosing argillites. Its continuation on the dip was exposed in the face of a bluff some 150 feet higher up the hill.

A sample from the ore exposed in the Nelson tunnel, composed of a finely crystalline mixture of lead, zinc, and iron sulphides, gave the following returns: Gold, 0.02 oz.; silver, 26.01 oz. to the ton; lead, 24.8 per cent.; zinc, 25.7 per cent. This, of course, is a very desirable grade of milling-ore and judging by indications there should be good possibilities for developing an important ore-body.

The old workings from which ore was formerly extracted for shipment could not be examined on account of snow, but at an elevation of 6,100 feet an old tunnel, now known as the "Blacksmith," had been driven into the hill with, presumably, the objective of exploring the downward continuation of the ore in these old surface workings. This old tunnel affords probably the best and safest place to carry on future exploration of the vein system at depth, and preparations were being made to carry on development-work from this point during the winter months.

Iron Ore.

Rumours have been current during the last year or so that a large body of magnetite-iron ore had been discovered near the headwaters of Moose creek in the Rocky mountains, which resulted in a few inquiries being made at this office.

The mining records at Golden show that claims had been staked on the north-east side of the headwaters of Moose creek by Pedley and Smith. This area is covered by J. A. Allan's report as published in Memoir 55 of the Geological Survey. In 1925 J. F. Walker visited the area in question. He examined the occurrence of a mineral high in titanium occurring in a basic pegmatite. This mineral was first determined by the British Columbia Bureau of Mines as being perovskite. Later, samples were sent to the Ottawa Mines Department and there determined by H. V. Ellsworth as being knopite or ceriferous perovskite. A report by H. V. Ellsworth and J. F. Walker describing the occurrence and giving details of a chemical and mineralogical examination of the mineral is contained in the 1925 Summary Report, Part A, G.S.C. It is evident from this report that the mineral only occurs in small quantities and is therefore not of commercial value, but only of scientific interest.

As regards the iron-ore deposits, Dr. Walker states in a letter to the Resident Engineer as follows: "It seems to me that they consider the area of ultra basic rock mapped by Allan and containing 14–15 per cent. magnetite to be an iron ore."

Placer-mining.

A syndicate composed principally of railway-men of Medicine Hat was formed during the year to provide capital for working gold-placer deposits up Quartz creek at the instigation of C. P. Price, more popularly known as "Kid" Price. Quartz creek flows into the Columbia river at Beavermouth, on the main line of the Canadian Pacific Railway.

Soon after the early placer excitement on Wildhorse creek at Fort Steele, the discovery of gold on Quartz creek attracted the attention of the "old-timers." To-day their diggings are hardly discernible, while the old cabins have long since rotted away. What luck attended these early placer operations is not known, but it is thought that the large percentage of boulders encountered seriously interfered with profitable working of the gravels by ground-sluicing methods.

As gold was found to exist some 500 feet above these old creek diggings the presence of an old channel was assumed, and to explore same the present work was started at an elevation of approximately 6,000 feet above sea-level and a number of leases staked along its probable course. The distance from Beavermouth to the workings is between 10 and 12 miles.

A small pit which had been hydraulicked during the latter part of the season exposed the bed-rock, which consists of a soft decomposed slate-schist. On top of this glacial boulders and clayey gravels had been deposited to a depth of about 7 feet. This material is not stratified but remains as left by the glacier. About 13 oz. of gold was recovered during the short period of operation. This gold was fairly coarse and rough, some of it having little quartz attached; hence it evidently had not travelled far and owed its origin to the erosion of some quartz vein or veins by glaciation.

The season's work, which was mostly accomplished by those interested financially in the undertaking, was quite a remarkable performance. It included the building of two cabins, excavating about 2 miles of ditch, building a penstock, laying two lines of wire-wound pipe, each 800 feet long, and the building of a sluice-box. All the supplies had to be packed in over a poor trail and the lumber was whip-sawn.

WINDERMERE MINING DIVISION.

Probably the most important event in the season's activities in this Division was the acquisition of the *Paradise* mine by R. H. Stewart on behalf of the Victoria Syndicate, of London. The property belongs to the Hon. R. R. Bruce, who for many years has been identified with its operation. It has been a small but steady producer of silver-lead ore, which occurred in an oxidized form known as "sand carbonates" in a leached and crushed zone. The mine was opened by adit-tunnels and the ore was extracted by pick and shovel, no powder being necessary in stoping operations. The only equipment the property could boast of was a short length of tram to the bins at the head of the wagon-road and a 3-ton White truck.

However, as depth was gained the "carbonates" became less plentiful and it was no great surprise to those familiar with conditions when primary sulphide ore made its appearance in the lower workings. This ore is essentially of milling grade; hence the management was faced with the necessity of a development campaign to ensure sufficient tonnage to warrant the considerable capital outlay in the installation of a concentrator and tramway.

With this object in view the Victoria Syndicate lost no time in making the installation of the necessary plant to facilitate the further development and exploration of the property. The plant consists of a 2-stage Ingersoll-Rand compressor and a 90-horse-power Vickers-Petter oil-engine. When the property was visited in August the development of the new ore-body had been confined to drifting and a little crosscutting from two intermediate levels, the No. 1 and No. 2, being 90 and 122 feet respectively above the No. 4 level, which latter is the lowest adit of the mine-workings.

The ore exposed in these workings consisted of disseminated lead, zinc, and iron sulphides in a siliceous lime gangue. It appeared to occupy a sheared zone having a width of about 50 feet and a strike of N. 30° W. The Intermediate drift No. 2 cut this ore at an oblique angle and had not determined its true length. A grab sample taken from a muck-pile in this drift, and which was considered to be fairly representative of the full width exposed in the roof, gave the following returns: Gold, trace; silver, 7.8 oz. to the ton; lead, 8.9 per cent.; zinc, 18.5 per cent.

The No. 1 Intermediate is only 32 feet below the No. 2 and had been driven in the same ore-body for a distance of 65 feet; the face of the drift was in ore. These workings lie beyond the end of the Main adit No. 4, which presumably will be extended to explore the downward continuation of the ore-body.

Lead Queen. This property, comprising a group of eight claims and two fractions, is situated near the headwaters of Frances creek at a distance of approximately 24 miles by road from the railway at Brisco. It was originally located by Tom Brown, of Wilmer. Since its discovery some twenty years ago it has been worked intermittently in a small way and occasional shipments of silver-lead ore made to Trail. According to the records the total amount shipped up to the end of 1919 was 266 tons. Its altitude, distance from transportation, and lack of equipment have seriously handicapped profitable operations in the past. In 1925 the property was acquired by New York interests and a crew of men was put to work during the latter part of the season. Work was continued during 1926 under the direction of F. M. Simmonds, a mining engineer of New York.

The vein occupies a sheared fracture in a dolomitic limestone and quartzite formation. It is persistent and well defined by a heavy streak of gouge on either wall. The ore occurs in lenses of finely crystalline galena in the sheared filling between walls, which in places are 15 feet apart.

The work done in 1926 was confined to the development of the vein from the No. 2 level. This level is situated at an altitude of 7,850 feet above sea-level and consists of a crosscut 345 feet long from the surface to the intersection of the vein. From the point of intersection the vein had been drifted on for a distance of 50 feet to the north and 50 feet to the south. At the north end face of the drift a 25-inch width of ore was exposed, which apparently had a tendency to widen in the bottom. A sample taken across 25 inches gave the following returns: Gold, 0.01 oz.; silver, 60.2 oz. to the ton; lead, 51.2 per cent.; zinc, 1.3 per cent. This ore-shoot had only been drifted on for about 15 feet. At the south end the drift was in sheared ground, in which values were principally confined to a streak 9 inches wide, a sample across which ran: Gold, 0.01 oz.; silver, 13.4 oz. to the ton; lead, 25.7 per cent.; zinc, 2.5 per cent. The strike of the vein as determined in these workings was N. 15° W. and dip 45° to the west. Wherever encountered the ore seemed to be stronger in the bottom than the top of the drift. This level is 110 feet below the No. 1, from which ore for shipment had previously been extracted.

In order to facilitate the handling of ore and supplies a 2-bucket tram 3,500 feet in length was installed during the summer, connecting the mine-workings with ore-bins at the end of the wagon-road. The track-cable is ⅝ inch, the haulage-line ⅜ inch, and the buckets have a capacity of 500 lb. Many improvements made around the camp added greatly to the comforts of the men and include a new cook-house. Before closing down for the winter a car-load of ore was shipped to Trail. It is the intention of the management to continue operations in the spring as soon as weather conditions permit.

Key. This property, comprising a group of seven claims and formerly known as the *Beulah* group, was acquired under option by W. A. Drayton in 1925. On account of its high altitude its development and exploration have necessarily been confined to a somewhat limited period each year. The camp, which consisted of several large tents, was situated on a slight bench of the side-hill at an elevation of 7,700 feet and at a distance by trail from the North fork of Toby Creek wagon-road of about 3½ miles. The length of haul from the railway is approximately 23 miles. A rough trail of about a mile in

Giant Mine Portal, Golden M.D.

Giant Mine, Golden M.D.

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length led from the camp to the workings, situated at an elevation of about 9,450 feet, in rugged summit country and surrounded by alpine-like scenery of unusual grandeur.

The vein is a small but well-defined fissure in a dolomitic limestone of the Mount Nelson formation. It has a strike of N. 20° W. and dip of 70° to the east. The ore, consisting of fine-grained galena with which is associated small values in copper and zinc, occurs in lenses occupying rolls or swells in the vein. Practically all the work had been confined to open-cuts along the outcrop, the deepest of which was 85 feet long and reported to be down 30 feet. This was full of snow so could not be examined, but a few hundred sacks of ore extracted from this cut were piled ready for shipment. Following along the strike in a northerly direction other open-cut work has disclosed narrow widths of ore, and at a distance of about 160 feet, in the uppermost open-cut, elevation 9,450 feet, a width of a few inches of massive galena was exposed along the bottom for a length of about 16 feet. A sample taken here across a width of 5 inches gave the following returns: Gold, trace; silver, 83.4 oz. to the ton; copper, 2.77 per cent.; lead, 69.8 per cent.; zinc, 5.2 per cent.

As grey copper was noticed in some of the ore here, much higher values might be obtained, but would not be representative of the average grade; for instance, a sample taken across a 2-inch streak of oxidized material at the surface assayed: Gold, 0.07 oz.; silver, 368.2 oz. to the ton; copper, 16.59 per cent.; lead, 12.7 per cent. Samples taken of sacked ore by J. D. Galloway, Provincial Mineralogist, who accompanied the writer on the trip, showed an average value of: Gold, 0.01 oz.; silver, 58.5 oz. to the ton; lead, 50 per cent.; copper, 0.8 per cent.

An old tunnel had been started to explore the vein and if continued would gain a depth of about 150 feet below the surface exposures at the open-cuts. As the ore apparently had a tendency to widen with depth, the driving of this tunnel should demonstrate the possibilities of the property.

In order to lower the ore-sacks to the trail below the camp two light aerial trams had been erected, one 250 feet in length and the other, the lower terminal of which was located near the camp, consisted of a single span of 3,750 feet. A third tram was contemplated; this would consist of a span of 3,000 feet and would land the ore at a point on the trail 3,500 feet below the workings and at a distance of about 1½ miles from the wagon-road.

A crew of eight to ten men was employed during the season and a shipment of 58 tons was made to the Trail smelter.

Among the numerous minor activities the following have been reported: At the *White Cat*, on Slade creek, a small crew of men was employed during the season and a shipment of 35 tons of silver-lead ore was made to Trail. On Toby creek the Silver Spray Mining Corporation, of Vancouver, had a small crew employed during the summer on the development of the *Silver Spray* group, owned by Murdoch McLeod. The option held by the company was not exercised and work was abandoned in the fall.

During the latter part of the season the *Mineral King* was leased by the owners, the Windermere Mining Company, of Vancouver, to Mr. Sontag, of Seattle, who, it is understood, intends to operate the property. The *Outlet* and *Outcrop* claims on the North fork of Toby creek were partly acquired by C. V. Sommerville and it is understood that a trail was constructed and preparations made for establishing a camp. According to recent reports the Silver Spray Mining Corporation has acquired the *Hot Punch* under option and intends to carry on development-work.

On Law creek W. A. Drayton had a crew of men working during the season on the *Scout* group.

List of Shipping-mines in the Windermere Mining Division, 1926.

Mine.	Locality.	Tons.	Character of Ore.
Daisy	Lake Windermere	2	Silver-lead.
Key	Invermere	28	Silver-lead.
Paradise	Invermere	691	Silver-lead.
Star	Windermere	3	Silver-lead.
White Cat	Lake Windermere	34	Silver-lead.
Silver Spray and Hot Punch	Invermere	13	Silver-lead.
Lead Queen	Windermere	35	Silver-lead.
Total		806	

FORT STEELE MINING DIVISION.

The year witnessed more than usual mining and prospecting activities. In the Kimberley area many more claims were staked, some by the Consolidated Mining and Smelting Company and a large block by the Western Exploration Company, of Cranbrook, of which R. A. Grimes is manager. These with previous stakings cover a very large area around the original holdings of the *Sullivan* mine. To the east of the *Sullivan* diamond-drilling was continued on a group of claims held by R. M. Bennett and associates, of Minneapolis. Unfortunately in the area surrounding the *Sullivan* there are few indications which can be accepted as a useful guide as to what may be expected below; hence diamond-drilling more or less at random has largely to be depended upon to reveal the presence of possible ore-bodies.

Sullivan Mine.

The production of the *Sullivan* mine has been well maintained throughout the year at 3,000 tons a day. The underground development has been satisfactory and has added to the already immense ore reserves. Many improvements have been made in the mine, including the replacement of timbering in the main tunnel by concrete posts and steel I beams. The rails in the main haulage-ways are 70-lb., while 45-lb. rails are used for side-tracks. The gauge of the tracks is 36 inches. Ore is hauled from the lower workings by 6- and 12-ton electric locomotives; the ore-cars are of 80 cubic feet capacity and are known as Granby side-dump cars.

The length of the low adit-tunnel, known as the "3,900," is 11,500 feet. It is a 10- by 12-foot tunnel, driven parallel to the ore-bodies in the foot-wall quartzite. At a distance of 9,000 feet from the portal it intersected the North ore-body, due to a change in strike. The vertical distance between the "3,900" level and the "Upper mine," known as the "4,600 level," is 700 feet, which represents a depth of about 1,500 feet on the dip of the vein. To gain further depth below the 3,900 sinking will be necessary. No timber is used in the stopes, pillars being left to support the roof, and it is estimated that about 15 per cent. of the ore is left in the pillars. About 9 tons a day to the man underground is produced. It is interesting to note that, of the men employed, 36 per cent. are Canadians, 24 per cent. are "Old Country" British, 13 per cent. Scandinavian, 13 per cent. Italian, 10 per cent. of other European nations, and 4 per cent. Americans. For further references *see* paper given by M. M. O'Brien, assistant superintendent, at the Western meeting of the C.I. of M. & M. at Cranbrook, October 15th, and published in Bulletin No. 176 (December, 1926) of the institute.

Sullivan Concentrator.—Among improvements made to this plant has been the addition of a re-treatment plant for the treatment of the zinc rougher middlings and tailings of the zinc-cleaners. Two Hardinge mills, 8 feet by 48 inches, are used for the further grinding of this material. The feed first goes to a 20-foot surge-tank. The underflow from this is pumped to a standard Dorr classifier, the sands from which are fed to one of the mills, while the overflow constitutes feed for the flotation-machines. The flotation product, of about 10 per cent. lead and an equivalent amount of zinc, is returned to the main grinding circuit. The tailings form the feed for the zinc-flotation. The resulting zinc concentrate, containing approximately 30 per cent. zinc and 1.9 per cent. lead, joins the zinc rougher concentrate in the cleaners. The main factor in mill equipment which will be responsible for increasing the capacity from 3,000 tons to 4,000 tons a day is the replacement of the primary 8-foot by 48-inch Hardinge mills by four 10-foot by 48-inch Hardinge mills, together with two quadruplex 16- by 20-foot Dorr classifiers.

For further reference to the *Sullivan* concentrator *see* paper read by H. R. Banks at the Western meeting of the C.I. of M. & M. at Cranbrook, October 15th, and published in Bulletin No. 176 (December, 1926) of the institute.

Stemwinder.

The operations of this property by the Porcupine Goldfields Development and Finance Company, Limited, rank next in importance to that of the *Sullivan* in this part of the district. During the year 28,000 tons were mined and shipped partly to Trail and partly to the *Snowstorm* custom mill at Troy, Montana. All the ore shipped was of milling grade. This tonnage represents the output of the *Stemwinder* for the last eight months of the year; previously to this the company was occupied in carrying out exploration-work by diamond-drilling and the Lundberg electrical prospecting methods.

The manager states that exploration and development work has not yet reached its logical conclusion, so it is not possible to say what the final result will be. Forty men were steadily employed at the mine.

At Moyie the Consolidated Mining and Smelting Company started up its new 500-ton concentrator during the summer on zinc middlings from the *Sullivan* concentrator and later switched it on to the tailings from the old *St. Eugene* mill.

These tailings form a big pile at the edge of Moyie lake and are being recovered by a floating suction-dredge, which pumps them into a large settling-pond. A clam-shell dredge excavates this material from this pond and dumps it into the mill-bins.

This concentrator is up to date in every particular; its simplicity in design and the small amount of floor-space occupied in comparison to the tonnage treated bear evidence of the great strides made during recent years in the concentration and separation of the metallic contents of this class of ore.

The grinding equipment consists of one primary Hardinge and two secondary Hardinge mills, each mill working in circuit with a Door classifier. The overflow from the secondary classifiers goes to a surge-tank, which feeds a 20-cell M.S. flotation-machine, where a lead concentrate carrying up to 70 per cent. lead, a zinc concentrate carrying about 51 per cent. zinc, and a middlings product are made. The middlings is returned to the circuit. The feed is said to carry about 2 to 3 per cent. lead and 5 per cent. zinc. The ore is amenable to treatment, being practically free from iron.

During the fall of the year the installation of a coarse-crushing plant was being made. It consists of a gyratory crusher and rolls and is intended for the treatment of ore from the old dumps of the *St. Eugene*.

Aurora. This property, which is situated on the west side of Moyie lake, opposite the *St. Eugene* mine, was acquired during the year by the Moyie Mining Syndicate, of Cranbrook. The Government assisted in building 2½ miles of road to the mine in order to connect it with the railway at Aldridge Siding. Since starting operations in the summer the mine has shipped a considerable tonnage of milling-grade ore to Trail. It is understood that a compressor is being installed. The mine is under the management of W. G. Smith.

Boy Scout. This group, consisting of four Crown-granted claims, is situated on Hell-roaring creek at a distance of approximately 4½ miles by trail from the wagon-road at St. Mary lake. It is owned by A. H. Mayland, of Calgary, and Mrs. John Bennett and N. A. Wallinger, of Cranbrook. The workings are located on the steep wooded hillside of the creek-valley. The vein, which has a south-easterly strike and a dip of about 60° to the south, apparently occupies a sheared zone in quartzites. It has been developed by two adit-tunnels. The No. 1, at an elevation of 5,175 feet above sea-level, was driven south-easterly for about 70 feet in the hanging-wall, when it was turned to the north-west and cut the vein in a few feet, exposing a 12-inch streak of finely crystalline lead, zinc, and iron sulphide ore. A sample across this width gave the following returns: Gold, 0.01 oz.; silver, 4.1 oz. to the ton; lead, 15.8 per cent.; zinc, 8.5 per cent. This ore was followed for 30 feet.

The No. 2 tunnel had been driven at a point 125 feet farther down the hill. For the first 70 feet it is in the foot-wall of the vein, which latter was encountered by a short crosscut. The vein-filling here principally consists of sheared and iron-stained quartzites, carrying small values in lead and zinc across a width of about 3 feet. A sample taken across 31 inches, which showed the most mineralization, assayed: Silver, 2.4 oz. to the ton; lead, 5.8 per cent.; zinc, 1.1 per cent. Past this the tunnel after wandering around in the foot-wall for about 50 feet turns into the vein, which is followed for a short distance. The ore exposed in the side of the drift is similar in character to that exposed in the No. 1 tunnel and in a short crosscut a width of 20 inches is exposed. A sample taken here gave the following returns: Gold, 0.01 oz.; silver, 3 oz. to the ton; lead, 16.5 per cent.; zinc, 8.1 per cent.

To further explore this ground the owners had let a contract for driving a 500-foot tunnel at an additional depth of 200 feet. W. J. Scorgie, who had taken the contract, installed a small portable oil-engine and compressor. A new cabin was built for the accommodation of the men.

Homestake. Situated on Perry creek. Operations were continued by the Cranbrook Gold Mining Company, Limited, of which W. S. Santo, of Cranbrook, is secretary. It is briefly described in the Annual Report for last year. When visited in April of this year the low tunnel had been advanced for a total distance of 500 feet and was within a few feet of its objective—namely, a point under the old shaft from the surface. The tunnel followed a sheared fault-fracture, the filling between walls being composed of broken country-rock, schist, and quartzite.

Several small stringers of quartz were encountered, but no ore in sufficient quantity to be considered of commercial importance. A sample from a 3-inch stringer of quartz assayed as follows: Gold, 0.36 oz.; silver, 1.5 oz. to the ton. A crosscut near the end of the tunnel revealed the width of sheared material to be about 7 feet; a sample across this width gave the following returns: Gold, 0.03 oz.; silver, 0.1 oz. to the ton. While the values in this tunnel were disappointing, the values obtained from several samples taken in the old shaft were encouraging; for instance, one sample taken across about 30 inches at a point 15 feet below the collar of the shaft gave the following returns: Gold, 0.21 oz.; silver, 0.2 oz. to the ton. Another sample taken 25 feet down across 27 inches assayed: Gold, 7.22 oz.; silver, 0.8 oz. to the ton.

This shaft is said to be down 60 feet, but as the ladders were not considered safe it could not be examined. Presumably the owners had satisfied themselves that good average values were obtainable in these old workings and that conditions warranted the expense of driving the long tunnel to further explore this ground.

At some little distance and entirely separate from these workings there are some old workings which are now in a caved condition. The dump of the old tunnel was a mixture of quartz and waste. A sample of some of the best-looking quartz from this dump assayed: Gold, 0.18 oz.; silver, 0.2 oz. to the ton. During the winter of 1925 the camp buildings were destroyed by fire and when the property was visited tents were being used.

Black Bear and Mabel.

This property is situated on the Kimberley–Cranbrook road at a distance of about 1½ miles from Kimberley. G. J. Spreull, of Cranbrook, is the agent for the property. The claims are of long standing and were prospected many years ago but no work has been done in recent years. The surface of the *Black Bear* is fairly flat and the only evidence of mineralization is a little iron-stained quartzite on which an incline shaft had been sunk to a reported depth of 100 feet. This was full of water and therefore could not be examined. However, judging from the dump, a little ore had been encountered, probably along the contact of diorite and quartzite. The ore consisted of coarsely crystalline galena associated with zinc-blende and iron pyrites in a quartz gangue.

On the *Mabel*, which adjoins the *Black Bear* to the south-east, there is evidence of a small vein occupying a tight sheared fracture in quartzite. This had been prospected by a shallow shaft and a little trenching. Of the two showings, that on the *Black Bear* appeared to be the most interesting; but owing to the shaft being inaccessible there was little to be seen.

Copper King.

This claim is situated on Bull river and is owned by W. S. Santo, of Cranbrook. When the property was visited during the early part of the season the long low crosscut tunnel which was being driven to intersect the vein at a depth of 150 feet below the upper workings had been advanced for a total distance of 347 feet and should soon reach its objective.

Great Western.

This group is situated at the head of Little Sand creek and at a distance of about 9 miles by road from the railway at Jaffray. The property, comprising nine claims, is owned by Alvin Benson and associates, of Cranbrook. The surface of the hillside in the vicinity of the workings is covered to a considerable depth with overburden; hence few rock-exposures are visible, except in the creek-bed, where the formation consists of uniformly bedded slates. The vein, upon which considerable prospecting-work had been done, is a strong quartz-filled fissure cutting the formation at a steep angle and striking easterly and westerly.

At an elevation of 4,500 feet a tunnel 63 feet in length had been driven, for which distance the vein was strong and well defined, its filling consisting of quartz, spathic iron with lead, zinc and iron sulphides. A sample taken across 18 inches at the face of the tunnel gave the following returns: Gold, 0.01 oz.; silver, 1.9 oz. to the ton; copper, 0.21 per cent.; lead, 5.9 per cent.; zinc, 6.6 per cent. A grab sample taken from about 50 tons on the dump assayed as follows: Gold, 0.01 oz.; silver, 3 oz. to the ton; copper, 0.32 per cent.; lead, 11.4 per cent.; zinc, 2 per cent. A sample of sorted ore assayed as follows: Gold, 0.01 oz.; silver, 9.4 oz. to the ton; lead, 33.5 per cent.; zinc, 0.8 per cent.

It is claimed that similar ore has been found in the direction of the strike of the vein on the top of the ridge 1,000 feet or more away. Another tunnel was being started on the vein where it had been disclosed in the creek-bed. This tunnel will gain an additional depth of

approximately 300 feet. Apparently the vein is persistent, well mineralized, and further development may open up some important ore-shoots.

Belleville. These claims, which are of long standing, are owned by J. Hamilton, of Cranbrook. During the season they were worked under option by R. H. Finley and associates. The property is situated at a distance of about 5 miles from Lumberton. It is easily accessible by road and a short length of trail. The area is underlain by Aldridge quartzites which have been intruded in the vicinity of the workings by diorite sills.

The work done by the owner some years ago, and now in a caved condition, consisted of three shafts, the deepest of which is said to be 60 feet. As good-grade zinc ore is said to have been encountered in one of these shafts, a crosscut tunnel 300 feet in length had been driven. This cuts a quartzite formation and then enters diorite. At the contact of the quartzite and diorite there is a sheared zone filled with soft decomposed material, caused, no doubt, by movement and subsequent oxidation of the iron sulphides contained in the igneous rock. This zone had been drifted on for 100 feet to the north-west. In the face of the drift some ledge-matter was encountered consisting of iron sulphides and a little quartz, with a little galena showing in places.

At the time of examination the property was in the prospective stage of development; no ore-body of commercial importance had been developed, but indications appeared to warrant further work being done. A sample from a small pile of sorted ore which had been extracted from the tunnel gave the following returns: Gold, 0.03 oz.; silver, 10.5 oz. to the ton; lead, 4.2 per cent.; zinc, 1.1 per cent. A small crew of men was employed.

Silver and Lead.* These properties, owned by J. W. Blake and family, of Skookumchuck, are situated at and near the head of an unnamed creek flowing into Lavington creek, which is a tributary of Findlay creek. The *Silver* group, which is at the head of the creek, consists of the *Cougar*, *Morning Star*, *Columbia*, and *Eagle* claims. The *Lead* group, 2 miles lower down the creek, consists of the *Mammoth* and *Superior* claims.

The present route to the properties is from Blake's camp, 2 miles north of Torrent Siding on the Kootenay Central Railway, by pack-trail, an estimated distance of 10 miles to the *Lead* group and a further 2 miles to the *Silver* group. This trail crosses the low divide west of the Columbia River valley and contains unnecessary adverse grades, whereas the natural route would be following the water-grade to the upper end of the Findlay Creek road at Cushing's ranch (some 4 miles from the *Lead* group).

The general formation of the area consists of schists and altered sedimentaries intruded by stocks and sills of granite. The *Silver* group deposit, consisting of oxidized silver-lead-zinc ore, occurs in a band of altered and in places decomposed limestone. At an elevation of about 7,300 feet, or a few hundred feet below the summit of the ridge forming the rim of a small glacial basin, shallow outcrop workings expose oxidized material containing streaks and bunches of carbonates containing small nuggets of galena. The rocks are considerably disturbed and shattered locally and the strike and dip of the sedimentaries could not be determined with accuracy. The shallow workings do not definitely indicate the character of the deposit, but the vein apparently strikes southerly or diagonally along the steep hillside, with very steep dip to the west, conforming to the bedding of the enclosing rock.

About 40 feet below the outcrop a crosscut tunnel has been driven some 120 feet south-easterly to crosscut the ledge, which should have been struck at a short distance inside the portal. At the point where the ledge should have been encountered close timbering prevented an examination of the rock, but it is understood that decomposed and oxidized material necessitated the extra timbering. No drifting was done on this material, which was probably the vein. The following samples were taken:—

Description.	Gold.	Silver.	Lead.	Zinc.
	Oz. per Ton.	Oz. per Ton.	Per Cent.	Per Cent.
Sorted and sacked carbonates from open-cut above tunnel	0.04	10.6	19.8	10.7
Streak of galena and oxidized ore in open-cut above tunnel	0.03	20.4	22.1	26.5
Green-stained oxidized material from same place	0.02	2.7	13.1	.....

The shallow cuts and inconclusive work done in the tunnel do not supply enough information to enable one to form any definite opinions regarding the probable extent or continuity of the deposit, which requires further superficial exploration.

The *Lead* group deposit occurs in a granodiorite sill which forms the base of some steep bluffs just above the cabin at about 5,800 feet elevation. Two short tunnels spaced a short distance vertically apart have been driven as crosscuts into the granite. At the time of the writer's visit in August a flat winze was being sunk at the inner end of the tunnel. The mineralization, consisting of veinlets and stringers of galena and pyrite and sparsely disseminated lead and iron sulphides, occur widely separated over a considerable width in a sheared and silicified zone in the granite. The mineralization dips flatly into the hill, approximating the dip of the schists which contact with the granite just above the workings. No samples were taken in the workings owing to the scattered character of the mineralization. A grab sample from a pile of material extracted from the winze in the upper tunnel assayed: Gold, 0.02 oz.; silver, 4.2 oz. to the ton; lead, 6.8 per cent.; zinc, 2.4 per cent.

Among other activities, the Evans Bros. put in a season at their claims on Whitefish creek. J. Angus continued work on his Hellroaring Creek property, and development of the *Brenda* group on Copper creek was continued under the direction of Dan McIntosh.

Placer-mining.

There was not a great deal of activity during the season in placer-mining, the principal operations being confined to Wildhorse creek, where W. A. Drayton had a small crew at work testing the gravels on the east side of the creek.

Gypsum.

Gypsum was mined by the Canada Cement Company near Mayook Siding on the Crowsnest Railway. It is reported that the Manitoba Gypsum Company intends to further develop its property near Wardner.

Phosphate.

The Consolidated Mining and Smelting Company carried on exploration of an extensive area of phosphate-bearing rocks in the vicinity of Michel. With reference to this work, S. G. Blaylock, general manager, states: "The phosphate-bearing rocks seem to be spread over a fairly large area. Some of the beds contain a fairly good percentage of phosphate and may be workable for the manufacture of fertilizer. If satisfactory methods can be worked out for treating this medium-grade material and markets can be obtained, there is sufficient phosphate to make a very large industry."

List of Shipping-mines in the Fort Steele Mining Division, 1926.

Mine.	Locality	Tons.	Character of Ore.
Sullivan	Kimberley	1,081,989	Silver-zinc-lead.
Stemwinder	Kimberley	28,241	Silver-zinc-lead.
Aurora	Moyie	1,690	Silver-zinc-lead.
St. Eugene	Moyie	86,992	Silver-zinc-lead.
Comet	Galloway	19	Copper.
Total		1,198,931	

SLOCAN MINING DIVISION.

The season's activities are reflected in the long list of shipping-mines which accompanies this report. The increase in production was greatly stimulated by the acceptance of milling-ore by the Consolidated Mining and Smelting Company at Trail, which benefited the large and small producer alike. The following résumé gives a brief outline of the most notable features of the season's mining activities in this famous Mining Division:—

The *Silversmith* mine, which still ranks first among the independent shippers of the district, started the year by making an exceptionally good showing, but shipments fell off towards the latter part and were suspended in December. The *Lucky Jim* produced a large tonnage and

Part of Kimberley, B.C.

Fernie, B.C.—Phosphate-rock Prospects in Foreground.

Property of LSNJS

new developments were attended by satisfactory results. At the *Ruth-Hope* recent developments in the lowest level give rise to expectations that this mine will soon rank among the most important shippers of the district. The Victoria Syndicate, of London, has acquired a number of claims and an extensive development and exploration campaign is being proceeded with under the direction of R. H. Stewart. The *McAllister* mine at Three Forks made a very good showing until the decline in the price of silver took place, when operations were suspended, the principal values being in silver.

The drop in the price of silver has not greatly affected activities at the numerous silver-lead-zinc properties; although it naturally made a difference to their earning-powers, it did not prevent profitable production.

SANDON CAMP.

Silversmith. This mine is owned by the Silversmith Mines, Limited, of which John B. White, of Spokane, is president and Oscar V. White, of New Denver, B.C., is manager. The company was incorporated in 1918 with a capitalization of $500,000; par value of the stock is 20 cents a share; assessable to 5 cents. Dividends paid to date amount to $725,000, leaving assets in cash, Government bonds, etc., of over $300,000. As will be seen from the above, the company has made a very creditable showing under the management of O. V. White, assisted by a competent staff both at the mine and the concentrator. Mr. White has been closely identified with active mining operations in the Slocan for many years; in fact, it was under his direction that the famous *Slocan Star* was developed and ranked first among the earlier producers of the Sandon camp.

Upon what was considered to be the depletion of the *Slocan Star* ore-bodies, an amalgamation was effected taking in the *Rabbit Paw* claim and the present company sprang into existence. Under the management of R. H. Stewart the *Silversmith* ore-body was discovered on the 1,000-foot level in 1918, and subsequently mined under the direction of O. V. White.

In order to handle this ore to the best possible advantage the first thing that needed attention was the provision for proper milling facilities, and in 1921 the *Ivanhoe* mill was bought from the Rosebery-Surprise Mining Company; during the same year and the early part of 1922 the remodelling of this plant and the erection of a tramway occupied the attention of the company. The normal output of about 3,000 tons a month was obtained in June, 1922.

During the period under review the *Silversmith* ore-shoot has been responsible for practically the entire output of the mine. In the prospectus published in 1922 Clyde White, the company's mining engineer, estimated the ore reserves to be sufficient to keep the mill running continuously at capacity for five years, and also made reference to ore possibilities in the easterly section as well as in the upper and lower horizons of the mine-workings. When the mine was visited in November the impression gained was that, while a fair tonnage would probably be won from the lateral and downward extensions of the *Silversmith* ore-body, around the edges of the stoped area, the future of the mine now depended on the development of new ore-bodies.

On the eighth level work was being done at the easterly end of the big stope; the ore developed during the summer in a separate shoot lacked continuity and did not come up to expectations; however, an attempt was being made to pick up the downward continuation of this shoot above the ninth level. Work was also being done at the westerly end of the big stope above the tenth level. On the twelfth level a raise was being driven to encounter the downward continuation of the ore exposed along the hanging-wall on the eleventh level. This raise was up 40 feet. No ore-body of commercial importance was exposed on the twelfth level, but this may be due to purely local conditions caused by tight folding at this horizon and should not be taken to signify that the ore is bottomed at this point; in fact, diamond-drilling from the twelfth level no doubt has been encouraging, for it is reported that the driving of a long tunnel is contemplated to develop the downward continuation of the ore-body at an additional depth of 500 feet.

Shipments to Trail were suspended late in the year; the reason given by the management was that they had decided to withhold same until metal prices improved. In the meantime development and exploration are being vigorously undertaken.

Slocan King. This property, which is owned by the Slocan King Mines, Limited, was formerly the property of the Noonday Mines, Limited. It is situated to the east of the *Silversmith* property and covers the possible extension of the

ore-zone in this direction. John B. White and associates, of Spokane, are principally interested in the incorporation of this company.

The group consists of the following claims: *Slocan King*, *Hidden Treasure*, *Echo Fraction*, *Silver Star Fraction*, part of the *Wyoming*, *Hillside*, *Edith Fraction*, *Minnesota*, part of the *Slocan Star*, part of the *Jennie*, *Eva Fraction*, *Emma Fraction*, *Slocan Belle*, *Ophir No. 3*, and *Morning Sun*. It is understood that it is the intention of the company to carry out the development of this property from the tenth level of the *Silversmith* and that work in this direction is now being undertaken.

Ruth-Hope. This property is owned and operated by the Ruth-Hope Mining Company, Limited. The capitalization is $1,000,000, divided into 1,000,000 shares of $1 each; registered office, 717 Vancouver Block, Vancouver. The property comprises fourteen Crown-granted claims, situated near the town of Sandon. Mining and development was vigorously proceeded with during the year both at the upper workings and in the lowest level—namely, the No. 5; this latter has no underground connection with the former.

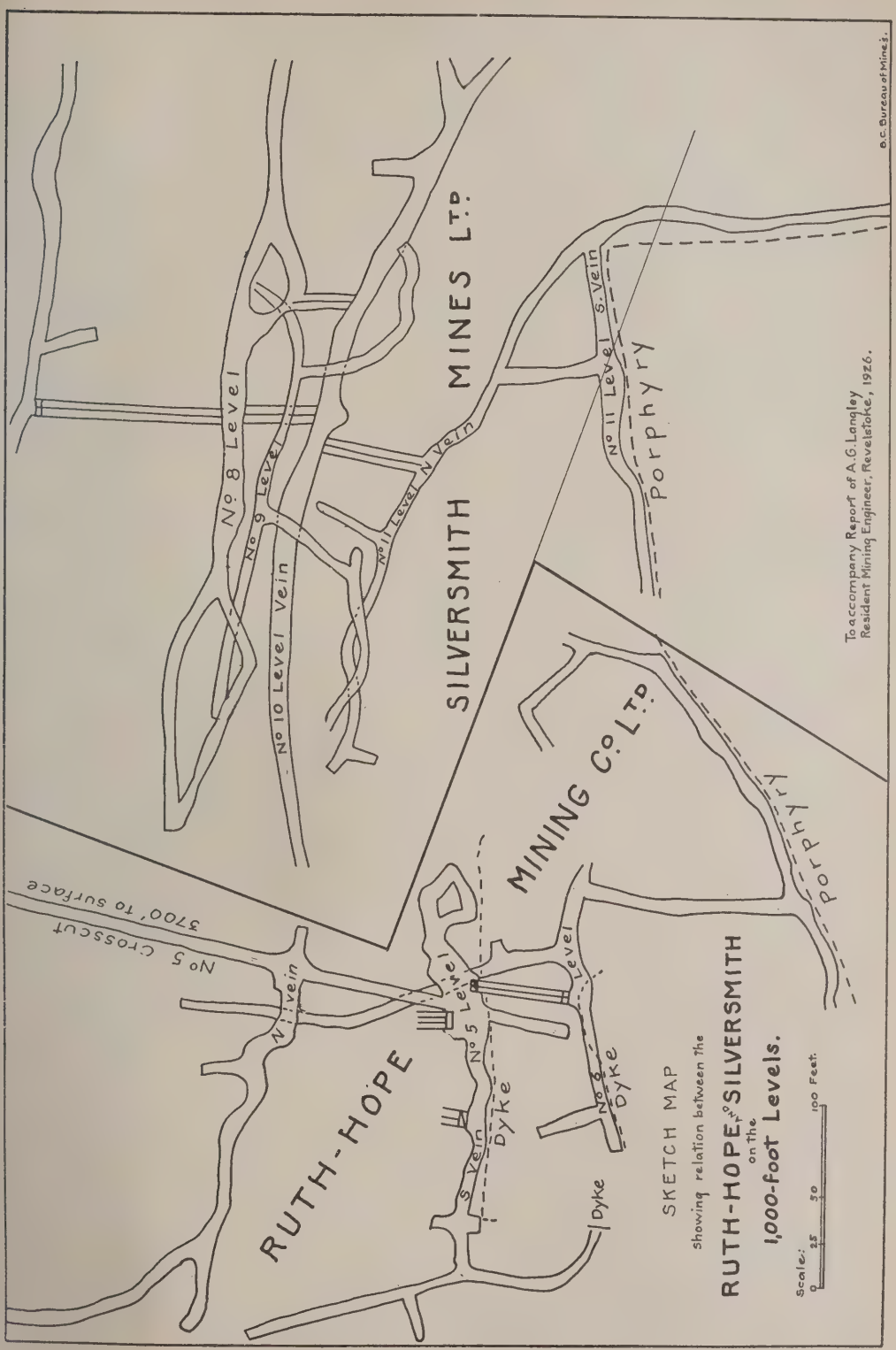
As the future of the property, judging by recent developments, depends largely on the results of the work being done on the No. 5 level, an attempt will only be made to describe this part of the mine. In reviewing the work undertaken during recent years, it may be mentioned that in order to explore the possible westerly extension of the mineralized zone in the adjoining property of the Silversmith Mines, Limited, which has been productive of a large tonnage of high-grade ore, a crosscut 2,700 feet in length was driven from the old workings of the *Ruth* No. 5 level. The total distance from the end of this tunnel to the surface is 3,700 feet. It closely parallels the westerly boundary of the *Silversmith* and has an elevation of 40 or 50 feet below the tenth level of this property; the distance between the workings of the two mines probably does not exceed 50 feet. Ventilation at this distance from the surface has naturally not been all that could be desired, but nevertheless a great deal of work has been accomplished in a comparatively short time.

In the *Silversmith* there are two ore-bearing zones on the tenth and eleventh levels, known as the North ore-body and the South ore-body, which are separated by a considerable width of waste. The *Ruth* crosscut intersected these two zones at 100 feet apart and was continued into the hanging-wall of porphyry. Drifting from this crosscut in a westerly direction along the south ore-zone disclosed small lenses and narrow widths of ore along a length of about 130 feet, when faulting movements were encountered and subsequent crosscutting at this point failed to reveal the continuation of the vein. Drifting easterly from the crosscut on this zone developed some interesting-looking ground, though the information gained from the work done so far is indefinite.

Near the end of the crosscut a 100-foot winze was sunk on what was considered to be the porphyry hanging-wall of the South ore-body. In this shaft a little ore is reported to have been encountered but had not been prospected. The development on the sixth level proved the porphyry on which the shaft had been sunk was a detached block and the true wall was about 130 feet farther to the south. Drifting and crosscutting on this level was disappointing, for although a little ore was encountered and the conditions appeared favourable, no ore-body of commercial importance was discovered and work was abandoned in this part of the mine.

Attention was then directed to the development of the North ore-zone, with results which have been decidedly promising. Drifting from the crosscut in a westerly direction, a 3- to 5-foot width of ore of milling grade is exposed along the roof of the drift for a distance of about 170 feet, when the continuity of the vein was interrupted by a strong sheared and faulted zone, in which drag ore in sufficient quantity to constitute good mill-feed had been developed along a distance of about 130 feet, making the total length of ore developed in this North ore-body about 300 feet. The drag ore occurring in the faulted zone was composed of slickensided boulders and fragments of ore in crushed graphitic slates. Recent shipments from this section of the mine are reported to have had average values of about as follows: Silver, 15 oz. to the ton; lead, 7 per cent.; zinc, 8 per cent. The direction of the fault is north-west and the indications appeared favourable for picking up the continuation of the vein in its normal easterly and westerly course; such being the case, it is possible that it is the downward continuation of the *Hope* vein, which outcrops at an elevation of 1,000 feet above.

Before encountering this ore-bearing zone the long crosscut penetrated about 600 feet of quartzites and then entered a considerable width of sheared and broken ground on the foot-wall side. A theory which has been advanced—namely, that the course of the ore-bearing fissure has


SILVERSMITH MINES LTD.
RUTH-HOPE MINING CO. LTD.
No 8 Level
No 9 Level
No 10 Level Vein
No 11 Level N. Vein
No 11 Level S. Vein
Porphyry
No 5 Crosscut
3700' to surface
N. Vein
No 5 Level
S. Vein
Dyke
No 8 Level
Dyke
Porphyry
To accompany Report of A.G. Langley
Resident Mining Engineer, Revelstoke, 1926.
B.C. Bureau of Mines.
SKETCH MAP
showing relation between the
RUTH-HOPE & SILVERSMITH
on the
1,000-foot Levels.
Scale: 0 25 50 100 Feet.

been influenced by the resistance of the harder beds, which in places have guided its course and governed to a certain extent the ore-deposition—if correct, may prove to be of assistance in following the ore-deposits of the Slocan. Judging from present indications, the prospects of the *Ruth* becoming an important shipper appear promising.

Leadsmith. This property, owned and operated by the Leadsmith Mines, Limited, comprises a group of five claims—the *Noonday, Bolander, Grey Eagle, Baby Fraction,* and *Fourth of July;* it was formerly owned by the Noonday Mines Company. The present company was incorporated in August, 1925, with a capitalization of $500,000, divided into 20-cent shares which are assessable to 10 cents. Previously to this the property had been lying idle during recent years, except for minor leasing operations. The camp is situated at 1½ miles by road from Sandon and at an elevation of 5,150 feet.

The mine had been opened by three levels, the Nos. 1, 2, and 3, which gain a depth of about 300 feet on the vein; from these workings there is reported to have been shipped 289 tons of sorted ore which averaged: Silver, 39.2 oz. to the ton; lead, 41.9 per cent.; zinc, 6.9 per cent.

The vein as exposed in the No. 2 and No. 3 levels is remarkably persistent and occupies a well-defined fissure between massive walls of slate having a width of from 2 to 3 feet and a north-easterly strike with a dip of 70° to the south-east. The filling consists of sheared country-rock, with varying amounts of spathic iron, quartz, and calcite, which in places form a banded structure. The ore, consisting of galena and zinc-blende, occurs in narrow lenses and lacks continuity along the strike of the vein.

On the No. 3 level the vein retains the same characteristics as in the No. 2, except that it shows a stronger width. Very little stoping has been attempted. There did not appear to be any large tonnage of mill-feed available on the dumps, but this could only be ascertained definitely by trenching and sampling, which would involve a considerable amount of work.

As the vein showed a tendency to widen with depth, a crosscut tunnel was started in the fall of last year to intersect its downward continuation at an additional depth of 300 feet. This tunnel reached its objective in a distance of 690 feet and when examined 120 feet of drifting had been accomplished. In this length of tunnel the vein maintained a width of about 5 feet and a few pockets of good-grade ore had been encountered. The equipment consists of a 35-horse-power portable Ingersoll-Rand compressor and a Sullivan Type C drill-sharpener. The camp buildings provide accommodation for ten men.

Victoria Syndicate. A considerable amount of exploration-work was undertaken during the year near Sandon by the Victoria Syndicate under the direction of R. H. Stewart. The area in which operations were carried on includes a string of claims extending from the *Minnehaha-Carnation* groups to the *Wakefield* group on the south side of the summit ridge, which forms the divide between the valleys of Carpenter and 4-Mile creeks.

On the north side small crews were employed at the development of the *Minnehaha* and *Carnation* claims. At the former property a little ore had been encountered, but owing to formation slips and faulting its continuity was indefinite and at the time of examination no ore-body of appreciable importance had been developed. At the *Carnation* the No. 3 tunnel had been advanced to a total length of 1,700 feet. The strike of the vein is easterly and westerly, with a dip of from 50° to 70° to the south. The vein has a good width, is remarkably persistent, and contains a filling characteristic of the Slocan veins. Ore of possible milling grade was encountered along about 150 feet of the drift at a point below an old prospect-shaft from the surface. It is intended to connect this tunnel with one being driven from the south side of the hill.

On the south side of the summit ridge a camp had been established and exploration-work was being proceeded with on some strong exposures on the *Read* and *Jennie Lind* claims. Where the vein outcrops a strong width of mineralization is exposed, lying between slate on the hanging-wall and lime on the foot-wall side. Bands of calcite are characteristic of the vein-filling, while the ore, in places showing a brecciated structure, apparently occurs as replacing limestone. A sample taken from a small pile of ore lying on the dump of the No. 2 tunnel gave the following returns: Gold, 0.02 oz.; silver, 55.4 oz. to the ton; lead, 17.2 per cent.; zinc, 14.8 per cent.

The vein had been prospected by a series of short tunnels and a low tunnel was being started with the object of developing the downward continuation of the ore-body in the No. 2 tunnel and eventually connecting with the No. 3 *Carnation* tunnel.

Minnesota. This claim is situated in what is known as Sunshine basin at a distance of about 3 miles by trail from Sandon and is owned by Al. Holmquist. The finding of vein-matter containing some high-grade ore in the surface wash has resulted in a considerable amount of tunnelling being undertaken, most of which was done some years ago. The old work consisted of three tunnels driven into the steeply rising hillside in hopes of crosscutting the vein which yielded the "float," but without results. If such a vein does exist in this locality, which seems reasonable to suppose is the case, these tunnels have been driven above it. More recent work consists of a crosscut tunnel 328 feet in length driven 40 feet lower down; in order to gain this depth it was necessary to start at a considerable distance from the lowest of the above-mentioned tunnels.

So far no vein had been exposed in this crosscut, but there were indications of a change at the face and its extension for a short distance appeared to be advisable. A sample from a small pile of float gave the following returns: Gold, 0.02 oz.; silver, 152.6 oz. to the ton; lead, 72.9 per cent.; zinc, 1.4 per cent.

Black Colt. This claim is situated on the south side of Carpenter creek at a distance of about 2½ miles by trail from Sandon. It was worked under option by A. Jacobson and Vandergrift Bros., of New Denver, who shipped a few cars of milling-ore. The area covered by this and the adjoining claims is in line with the possible easterly extension of the *Queen Bess* zone of fissuring. The principal workings consist of two levels driven at a vertical distance of 200 feet apart.

The formation encountered in the upper level consists of slate lying at a flat angle and evidently broken over. In this formation sections of a vein had been developed which yielded small tonnages of high-grade ore, but owing to formation slips and faults its continuity had been interrupted. During the summer a shoot of good-grade ore 80 feet long and about 2 feet wide was mined and shipped. This occurred between two flat faults and had a depth of 30 feet. Very little had been done to trace its upward continuity on account of its proximity to the adjoining claim. The lower tunnel, however, had been advanced 250 feet and it was estimated had still 150 feet to go before results could be expected. It is an interesting area and no doubt further prospecting will uncover more ore. On the dump of the upper tunnel there is a probable 200 tons of milling-grade ore.

Victor. At this group, which lies at a short distance to the north of the last-mentioned property, Geo. Petty, the owner, continued surface prospecting and underground development. A No. 3 tunnel had just been started and followed a small seam of galena for about 35 feet. Unfortunately the development at depth had not established the downward extension of the high-grade ore-shoot developed between the surface and the No. 1 level. As there is a possibility that the vein has been faulted in a horizontal direction, crosscutting from the No. 2 level appeared to be warranted.

Other Properties.—Among the numerous other activities the following have been reported:—

At the *Noble Five* Paul Lincoln, the former manager, secured a lease on the property during the latter part of the year and put a small crew of men to work. Arrangements were made for the use of the *Sovereign* tramway for transporting the ore to the railway at Sandon.

The American Boy Mining Company, which for a number of years has been carrying on exploration and development work at the *American Boy* and latterly at the *Last Chance*, added the *Sovereign* mine to its holdings. This property was formerly owned and operated by Clarence Cunningham.

The *Wonderful* was operated throughout the year by Clarence Cunningham, who had a small crew of men employed.

The *Canadian* group was operated by the owner, Joseph Brandon, and a crew of eight men. At the eighth level, which is driven at an elevation of approximately 1,000 feet below the outcrop, it is reported that 40 tons of ore was mined which gave the following values: Silver, 136 oz. to the ton; lead, 66 per cent.; zinc, 4 per cent. A car-load was also mined from the workings at the summit of Silver ridge, which forms the divide between Carpenter and 4-Mile creeks.

Leasers were busy at the *Colonial, Surprise, Mountain Con, Richmond Eureka*, where the material on the dump was reclaimed by jigging; the *Alamo, Trade Dollar, Rambler-Cariboo*, and *Elkhorn*. Further work was done on the *Dorothy* by the owner, J. P. Wilson, of Sandon; also

on the *Reco*, owned by J. M. Harris, and at the *Corinth* by the Corinth Silver-Lead Mining Company, in which Seattle capital is interested.

Lucky Jim. This mine is owned and operated by the Lucky Jim Lead and Zinc Company, Limited, of which A. G. Larson is president and manager. The mine is situated at Zincton, on the Kaslo & Nakusp Railway. The company started operations in 1925 after acquiring the Rosebery concentrator. Mining and milling operations were carried on continuously until December, 1925, when it was decided to abandon milling the ore at Rosebery and instead ship it to Trail for concentration and reduction. During the year 1926 the company has ranked among the most important shippers of the district.

The ore is low-grade silver-lead-zinc, and as the mine is capable of producing a large tonnage, the problem of concentration and separation of its metallic values at the lowest possible cost was occupying the attention of the management during the latter part of the year, and the erection of a concentrator near the mine was being seriously contemplated.

During the year a very complete power unit was installed, consisting of a 120-horse-power Fairbanks-Morse semi-Diesel engine and a Sullivan single-compound compressor, 16 by 9¾ by 10, with oil-tank of 10,000 gallons.

Probably the most important underground work was the continuation of No. 4 level, where ore was developed for a length of 320 feet, having an average width of about 8 feet, with good possibilities for lateral extensions. On its dip this ore had been followed for 150 feet to the No. 3 level. Above the No. 3 it has been mined for 200 feet on the dip, along a length of about 150 feet, the width averaging about 10 feet.

The property is one which undoubtedly has attractive latent possibilities. Conditions seem favourable for the same structural features, which have been responsible for providing channels for the ore-bearing solutions, being repeated farther back in the hill, thus lending encouragement for further exploration in this direction, while the development of the downward continuation of the ore-zone from Nos. 5 and 6 levels would appear to be of primary importance.

The production for 1926 was 20,478 tons. The silver bears a uniform ratio of 1 oz. to the unit of lead. The zinc tenor of the ore shows a tendency to increase with depth and that of the lead to decrease.

Three Forks.

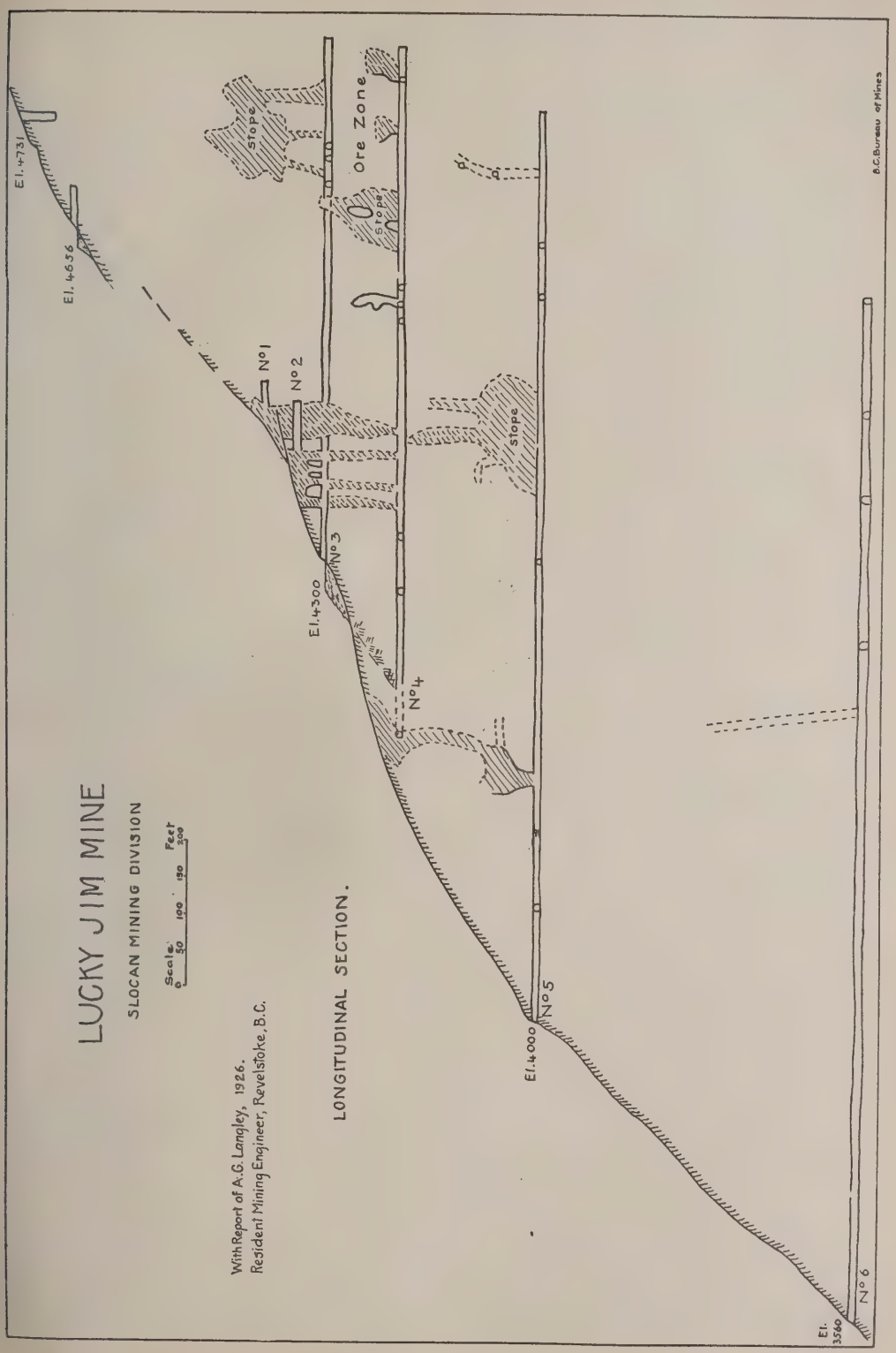
McAllister. This property, which is situated on Kane creek at a distance of 3 miles from Three Forks, is owned by the Slocan Silver Mines, capitalized at $500,000, of which the Standard Silver-Lead Mining Company, of Silverton, owns the control of the stock. The mine was operated during the greater part of the year under the direction of W. H. North.

The area in which the vein occurs is quartzite underlain by a soft bed of slate; the latter has an estimated thickness of 300 feet. This series has been intruded by pre-mineral porphyry dykes which are cut by the vein. The vein is a strong quartz-filled fissure, carrying values in silver which are associated with grey copper (friebergite). In certain sections very high-grade ore has been encountered, although the average values along a 1,000-foot length of drifting on the No. 3 level are reported to run between 30 and 40 oz. to the ton. No ore had been developed in quantity on the fifth and sixth levels, but conditions indicated good possibilities for further prospecting on these horizons. The values on the lowest level at which ore was being mined—namely, the No. 4—were better than those encountered on the level above.

An interesting feature, which has been demonstrated by recent developments, is that in the quartzites the vein is strong and well defined, but where it encounters the soft slate formation its identity is lost. This is either due to faulting at the contact of the slate and quartzite or more probably to the closure of the fissure in the soft slates, in which event its continuity might be expected where it again enters the quartzites.

The mine is well equipped with a tramway and power plant. Shipments were suspended when the price of silver dropped. For further reference *see* Annual Report for 1925 and previous years.

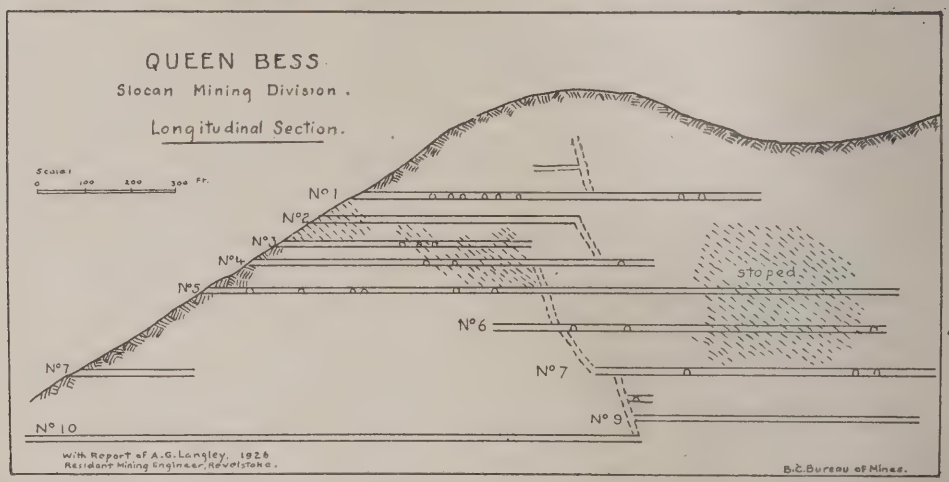
Monitor. At the *Monitor*, which is situated at a short distance from Three Forks, George Gormley mined a few car-loads of milling-ore, which was shipped to Trail. The property is one of old standing and belongs to the Rosebery-Surprise Mining Company, of New Denver.


LUCKY JIM MINE
SLOCAN MINING DIVISION
Scale: 0 50 100 150 200 Feet
With Report of A.G. Langley, 1926.
Resident Mining Engineer, Revelstoke, B.C.
LONGITUDINAL SECTION.
El. 4731
El. 4636
El. 4300
El. 4000
El. 3560
No 1
No 2
No 3
No 4
No 5
No 6
Stope
Ore Zone
Stope
Stope
B.C. Bureau of Mines

Alps Alturas.—The trail up the North fork of Carpenter to the *Alps Alturas* was repaired and W. J. McMillan, the owner, spent part of the summer at the mine. The principal values are in antimony.

Queen Bess. This property, comprising a group of nine claims, is situated near Alamo and is owned by Clarence Cunningham. A brief review of the history of this property reveals what may be accomplished in the Slocan by those who have the courage and tenacity of purpose to undertake systematic development-work in favourable localities. Similar results have been obtained at other properties and in all probability will be repeated for many years to come.

The records show that this mine was a steady producer up to 1904, with a total yield of $225,000 net smelter returns. It was then considered to be worked out and was abandoned. In 1916 Clarence Cunningham, who acquired the property, put a small crew of men to work and in a short time discovered a new ore-shoot having dimensions of 400 feet long and 5 feet wide and extending from the sixth level to within a short distance of the surface. The production from this ore-body was approximately 12,000 tons of ore, which yielded net smelter returns of $1,250,000. The old company missed this ore-body by not extending the main drift on the



fifth level for another 20 feet. In 1917 the mine was equipped with an aerial tram to the railway and steady shipments were made until 1920, since when the production has principally consisted of small tonnages from leasing operations.

The *Queen Bess* vein occupies a sheared fissure in slate and has a north-easterly strike and a dip of 55° to the south-east. The vein-filling consists of sheared and crushed oxidized material, in which the ore occurred as clean galena averaging 1½ oz. of silver to the unit of lead. The mine-workings, consisting of ten levels, are extensive. The downward continuation of the ore-shoot below the seventh level has not been definitely established, although indications on the ninth level appeared favourable and the lower horizons of the mine hold attractive possibilities for further exploration.

During 1925 two leasers extracted about $30,000 worth of ore by gophering about above the No. 1 level, and the only work being done during the present year was the driving of a short crosscut and raising from the No. 1 level to pick up the continuation of this ore. Generally speaking, the mine-workings are in good condition and also the camp buildings, which provide excellent accommodation for the mine crew.

New Denver and Silverton.

Bosun. This mine is situated near New Denver and is operated by the Rosebery-Surprise Mining Company, of which J. P. MacFadden is superintendent. It has been a steady and profitable producer for a number of years. The production during the year was obtained from an ore-shoot between the sixth and fifth levels. This was discovered by raising on a tight seam of zinc exposed in the roof of the main drift

on the No. 6 level. At 25 feet above the level this opened out into an important ore-body, having a length of about 85 feet and a width of from 12 inches to 3 feet of massive galena carrying high silver values. The ore was tightly frozen between slate walls and occurred as a lens, which at 60 feet above the level began to show signs of diminishing in width and regularity. According to recent reports this ore-shoot is now worked out and the company has commenced shaft-sinking from the No. 6 level on ore exposed in the bottom of the drift.

Exploration-work during the year was principally confined to the advancement of the No. 5 level through the faulted zone at the easterly end of the workings. The old upper workings are being worked under a lease by about twelve men. The company made substantial shipments of crude ore and high-grade milling-ore; a typical analysis of the latter is as follows: Gold, 0.01 oz.; silver, 73.1 oz. to the ton; lead, 12.8 per cent.; zinc, 23.9 per cent.; iron, 6.8 per cent. The lead concentrates from this ore contained the following values: Gold, 0.04 oz.; silver, 215.8 oz. to the ton; lead, 54.4 per cent.; zinc, 17.6 per cent. The zinc concentrates averaged: Silver, 65.8 oz. to the ton; lead, 1.7 per cent.; zinc, 50.7 per cent. The tailings carried: Silver, 4.8 oz. to the ton; lead, 1.1 per cent.; zinc, 2.5 per cent.

Molly Hughes.—The *Molly Hughes* mine near New Denver was operated by a local syndicate, composed of practical miners, during the latter part of the year and a shipment was made to Trail.

Mountain Chief. At the *Mountain Chief*, which is situated on the New Denver–Three Forks road, four Italian miners put in a busy season at reclaiming the old stope fillings. The plant used was inexpensive and practical and might be profitably applied in other cases where water is available for power and washing purposes. The ore from the mine was dumped into a pocket on the dump, from which it passed over a small grizzly, where large pieces of waste were discarded and the fine stuff was fed into a launder, which delivered it into a small Blake crusher and then to two jigs. This miniature concentrator was operated by a 12-inch Pelton wheel at a head of about 400 feet. About twenty sacks of middlings were being made a day, said to average about: Silver, 64 oz. to the ton; lead, 25 per cent.; zinc, 35 per cent. This was shipped to the Trail concentrator for further treatment.

The Standard Silver-Lead Company's mill was destroyed by fire in July, soon after it had been restarted to treat an accumulation of tailings, and ore mined by a number of leasers. Leasing operations, however, are being continued and a few small shipments were made to Trail.

Hewitt. The *Hewitt* mine on 4-Mile creek was acquired under option by the Victoria Syndicate and a crew of men was put to work during the summer at further exploration and development under the direction of R. H. Stewart. It is understood that the work is being principally confined to the development of the vein from the lowest workings.

Van Roi. At the *Van Roi*, which adjoins the *Hewitt* to the east, Clarence Cunningham, who owns the property, had a small crew engaged at the development of the ore which outcrops at the surface and is considered to belong to the South vein. A short tunnel which had been run along the strike of the vein below this outcrop exposed a strong width of low-grade ore which was encountered near the end of the drift, but not sufficient work had been done at the time of examination to prove its extent. Conditions, however, appeared promising for the development of an important ore-body in this section of the mine-workings, which is connected by a raise with the No. 5 level at the head of the tramway.

Galena Farm. This well-known property, which has been operated intermittently for a number of years, is owned by the Patrick Clarke Estate, of Spokane. During the first three months of the year it was operated by the Porcupine Goldfields Development and Finance Company, which undertook a diamond-drill campaign to explore the downward continuation of the ore-bodies, and while this work was proceeding shipped 738 tons of milling-grade ore from the old stopes. Unfortunately the results obtained by the diamond-drill were not considered satisfactory and the option was relinquished.

During the latter part of the year Joe Johnson and Mathews, experienced Slocan miners, took a lease on the property and started work at the west end of the old stope. By following "drag ore" in a north-and-south fault which cuts off the westerly extension of the main ore-body a nice showing of ore was encountered at a height of about 10 feet above the top of the old stope and to the west of the fault. This ore was about 35 feet below the surface, but further prospecting at an additional depth of 40 feet had disclosed its downward continuation. Although

the work done had not been sufficient to determine the extent of this new discovery, the possibilities of deriving a considerable tonnage from this section of the mine-workings were decidedly encouraging.

The main ore-body of the mine, which is now stoped out, had a length of between 300 and 400 feet and an average width of from 8 to 10 feet. It strikes N. 70° W. and dips at an angle of 45° to the north. On account of topographical conditions the greatest depth obtainable by adit-tunnel without an exceptionally long drive is 150 feet below the outcrop.

The geology of the area is complex owing to the intrusive granite and dyke rocks. The *Galena Farm* vein occurs in an inclusion of Slocan sediments in a granite area and lies in a well-mineralized zone, which is traceable to 4-Mile creek in an easterly direction. The displacements by faulting movements which can be distinctly seen in the stope at the 100-foot level, and at a short distance below, have thrown the ore into the hanging-wall side, suggesting that its downward extension might be expected to the north. In the easterly end of the workings a layer of creek-gravel is exposed at a short distance below the 100-foot level, but this is not to be wondered at, for at this point the depth below the bottom of the present creek-channel cannot be many feet. For further reference *see* the Annual Report for 1915.

At the *Metallic* a few men were employed at mining and the further development of the property. A few cars of milling-ore were shipped to Trail. The property lies at a short distance to the east of the *Galena Farm*.

Mammoth. This group consists of five claims—the *Monarch, Mammoth, Moose, High Ore,* and *Hercules*. It is owned by H. W. Dewis and S. Wetterhuus, of Silverton, and is now being operated under option by the Porcupine Goldfields Development and Finance Company, Limited. The area occupied by this group is thought to cover the possible easterly extension of the *Standard* ore-zone, which was responsible for yielding one of the largest ore-shoots ever developed in the Slocan. Prospecting-work is being confined to two veins—namely, the *Buffalo* vein and the *Mammoth*. The former is a small well-defined quartz-filled fissure striking north and south and the *Mammoth* vein occupies a sheared zone in slate and limestone having a width in places of 20 feet, with a strike of about N. 75° E. The workings, consisting of four adit-tunnels, are situated on a steep timbered ridge between snowslide gulches.

The No. 1 tunnel had been driven at an elevation of 5,819 feet for a distance of 145 feet on the *Buffalo* vein, at which point the *Mammoth* vein was intersected. At the point of intersection of the two veins a short shoot of ore having a width of about 7 feet was encountered, which was apparently of milling grade.

The No. 2 level, driven on the *Mammoth* vein at an elevation of 5,656 feet, was in about 200 feet. In this distance the vein-filling, consisting of sheared and crushed country-rock, contained narrow bands and pockets of galena and zinc-blende of sufficient quantity in places to constitute a milling grade of ore. The vein had been stoped to a height of about 10 feet above the drift for a length of 50 feet and from this stope 900 sacks of ore had been hand-sorted for shipment. A sample across 6 feet of the vein here is said to have yielded the following returns: Silver, 33 oz. to the ton; lead, 2 per cent.; zinc, 16.8 per cent. A sample from 50 sacks of sorted ore assayed: Silver, 77 oz. to the ton; lead, 13 per cent.; zinc, 18 per cent.

The No. 3 tunnel, driven at an elevation of 5,552 feet, had been advanced about 200 feet on the *Mammoth* vein. Here the vein, dipping at an angle of 65° to the south, showed a width of about 20 feet. The drift was on the hanging-wall side and crosscuts had been run every 50 feet to the foot-wall. A little ore had been exposed and indications looked promising. Above the tunnel the vein had been exposed for a considerable distance by ground-sluicing.

The No. 4 tunnel, driven at an elevation of 5,470 feet, had been advanced for 100 feet on the *Buffalo* vein, its objective being to explore the *Mammoth* vein from the point of intersection, which was estimated to be at a point about 350 feet from the portal. It is intended to make this the main adit-level.

During the summer a telephone was installed at the mine and extensive improvements were made to the trail. The mine crew consists of about twenty men.

Echo.* The *Echo* group comprises the *Echo, Duke, Duchess, W.H.R., Graphic,* and *Boston* claims and is owned by the Echo Silver Lead Mining Company. The property was taken under lease and bond last summer by G. Purt and associates, of Silverton. The property is described in the Annual Reports for 1915 and 1917, when the mine was being operated by the above company, which ceased work the following year.

St. Eugene Mine—Re-treating Tailings.

St. Eugene Mine—Mill for re-treating Tailings.

In 1919 lessees shipped 500 tons of ore and a few tons were shipped in 1921, since when the property has been shut down.

The *Echo* claim, upon which most of the work was done, adjoins the *Alpha* claim of the Standard Silver Lead Mining Company on the north and is staked along the strike of the *Standard* vein.

The lessees propose to continue development-work and ship milling-ore which was left in the workings. A grab sample from a pile of this ore awaiting shipment assayed: Gold, 0.04 oz.; silver, 46.8 oz. to the ton; lead, 13.1 per cent.; zinc, 11.4 per cent. Since the property was visited 25 tons of milling-ore was shipped to Trail.

Fisher Maiden.* This property, situated on 4-Mile creek about 8 miles by road from Silverton, was operated by G. Long, C. Barber, and N. S. Tucker under lease and bond from the owners, a Spokane company which ceased operations in 1905. The property consists of two Crown-granted claims, the *Troy* and *St. Helena*. Until the present operators started work in the fall of 1925 there have only been occasional leasing activities at the property, including the driving of 300 feet of tunnel by Barber and Tucker in 1924.

A considerable amount of development-work was done between 1902 and 1905, during which period 36 car-loads of sorted ore is reported to have been shipped. In the 1904 Annual Report reference is made to a 100-ton shipment which averaged about 90 oz. of silver to the ton and 4 or 5 per cent. lead. The old workings from which this ore was extracted are mostly caved and little information could be obtained about them. They develop fissure-veins in syenitic granite which strike north-westerly up the steep hillside from the creek.

The following extracts from the Annual Report for 1904, page 178, describes the ore occurrence:—

"The vein is a true fissure in syenitic granite, having a north-east and south-west strike, with a dip to the north-west of from 75° to 80°, and appears to accompany, and possibly partially replace, a porphyry dyke, the mineral occurring on either granite wall for from 4 to 12 inches thick in the ore-shoots, while the vein proper is from 1 to 4 feet wide," and "the shoot on No. 4 is about 110 feet long and contains a heavy percentage of zinc."

The lowest of the old tunnels is about 30 feet above the level of 4-Mile creek. The new work consisted of a crosscut tunnel being driven a short distance down-stream from the lowest tunnel, on which about 45 feet additional depth will be gained. At the time of the writer's visit this new tunnel had been driven 251 feet.

The lessees proposed to ship milling-ore from the dumps of material left from the sorting of the higher-grade ore previously shipped. Hundred-pound samples from two of these dumps, each containing a few car-loads, assayed: Gold, trace; silver, 32 oz. to the ton; lead, 3.8 per cent.; zinc, 26.9 per cent.; and: Gold, trace; silver, 20 oz. to the ton; lead, 1.8 per cent.; zinc, 12 per cent. Mill tests on these samples showed that the ore treats very readily with standard reagents, producing only a zinc concentrate and tailing. The grade and extraction of the zinc were both good.

List of Shipping-mines in the Slocan and Slocan City Mining Divisions, 1926.

Mine.	Locality.	Tons.	Character of Ore.
Alamo	Alamo	64	Silver-zinc-lead.
Alpha	Silverton	5	Silver-lead.
Black Coalt	Sandon	170	Silver-lead-zinc.
Bosun	New Denver	5,485	Silver-lead-zinc.
Canadian	Sandon	117	Silver-lead-zinc.
Carnation	Sandon	26	Silver-lead.
Colonial	Sandon	111	Silver-lead.
Dora	Three Forks	2	Silver-lead.
Dougherty	Sandon	7	Silver-lead.
Echo	Silverton	25	Silver-lead-zinc.
Galena Farm	Silverton	748	Silver-lead-zinc.
Hewitt	Silverton	128	Silver-lead-zinc.
Lucky Jim	Zincton	20,478	Silver-lead-zinc.
Mammoth	Silverton	42	Silver-lead-zinc.
McAllister	Three Forks	5,678	Silver (dry ore)

LIST OF SHIPPING-MINES IN THE SLOCAN AND SLOCAN CITY MINING DIVISIONS—*Continued.*

Mine.	Locality.	Tons.	Character of Ore.
Metallic	Silverton	24	Silver-lead-zinc.
Molly Hughes	New Denver	96	Silver-lead.
Monitor	Three Forks	232	Silver-lead-zinc.
Mountain Chief	New Denver	209	Silver-lead-zinc.
Noble Five	Sandon	148	Silver-lead-zinc.
Queen Bess	Alamo	44	Silver-lead.
Rambler-Cariboo	Rambler	82	Silver-lead-zinc.
Richmond-Eureka	Sandon	59	Silver-lead.
Ruth-Hope	Sandon	1,221	Silver-lead-zinc.
Silversmith	Sandon	18,510	Silver-lead-zinc.
Sovereign	Sandon	25	Silver-lead-zinc.
Standard	Silverton	156	Silver-lead-zinc.
Surprise	Sandon	172	Silver-lead.
Trade Dollar	Sandon	102	Silver-lead-zinc.
Van Roi	Silverton	733	Silver-lead-zinc.
Victor	Sandon	42	Silver-lead.
Wonderful	Sandon	841	Silver-lead-zinc.
Enterprise (Slocan City M.D.)	Slocan City	605	Silver-zinc-lead.
Ottawa (Slocan City M.D.)	Slocan City	26	Silver.
Total		56,413	

AINSWORTH MINING DIVISION.

KOOTENAY LAKE SECTION.

The most important work in the Kootenay Lake section of the Ainsworth Division was the operation of the famous old *Bluebell* mine by S. S. Fowler and B. L. Eastman. Temporary difficulties caused by water-shortage for power purposes during the latter part of the summer were successfully overcome by utilizing the water in the lake at the head of Tam O'Shanter creek. This lake, beautifully situated in a basin at the head of the creek, is about 1 mile long and a quarter of a mile wide. Its elevation is about 6,000 feet above sea-level.

Upon investigation it was found that by placing a short dam across the creek outlet sufficient storage could be obtained to supply the *Bluebell* plant with power during the dry period of the year. Accordingly, in September, a small crew of men was put to work, a trail was constructed for packing in supplies, a cabin built, and the dam completed during the latter part of the year.

The beneficial results of this work have already been reflected in the fact that sufficient power was available from September to December to operate the plant, which otherwise would have been forced to close down. During the year the output of the mine—namely, 32,310 tons—was won from various places from the surface down to the lowest or "E" level. Of this tonnage, 23,200 tons was passed through the *Bluebell* concentrator; the balance, except a small amount of waste discarded at the sorting-belt, was shipped to Trail for concentration. The average mill-feed is said to run about 6 to 7 per cent. lead, 8½ per cent. zinc, and 2.8 oz. to the ton in silver.

The outstanding feature of underground work was the very satisfactory results obtained by lateral development of easterly-westerly fractures from which a large tonnage was won at low cost. Numerous references to this property may be seen in the Annual Reports of former years.

Kirby. This property, situated on the shore of Kootenay lake a short distance from Riondel, is owned by the Shepherd Mining Company, of which A. J. Curle, of Kaslo, is president. A lot of work has been accomplished in order to explore the ground underlying surface showings of silver-lead-zinc ore. Briefly, the work consists of a 1,000-foot crosscut tunnel driven from the lake-shore. For the first 750 feet this tunnel penetrates a bank of gravel-wash. Upon striking bed-rock some float carrying galena was encountered, which indicated the possible presence of a vein at this point. At a distance of 900 feet from the portal a small vein slightly mineralized was cut; this is thought to be the same as that which had been prospected on the surface. At 1,000 feet in, another vein was

intersected which showed greater strength and was drifted on for about 750 feet. This vein, having a northerly and southerly strike, conforms with the bedding-planes between the well-defined walls, of which the filling consists of crushed and broken country-rock containing occasional bunches and streaks of ore, but not anywhere in sufficient quantity or high enough in grade to constitute an ore-body of commercial importance. This drift is connected with a shaft from the surface, the total vertical depth being about 150 feet.

A crosscut run into the hanging-wall with the object of picking up the downward continuation of a vein exposed at the surface developed a narrow streak of zinc-blende and galena. The formation encountered in these workings is a dolomitic limestone which has been intruded by aplitic dyke-rock, which apparently has a tendency to conform with the bedding-planes. With evidence of mineralization, seemingly, wherever channels have been provided for the solutions, it is not inconceivable that with favourable structural conditions important ore-bodies might be found to exist.

The camp buildings, which are all new and in first-class condition, consist of a small two-story bunk-house and cook-house combined, a small residence, and a power-house in which an oil-engine and compressor are installed.

Mining activities in the vicinity of Ainsworth have been confined to minor operations of leasers at a number of properties. During the latter part of the year an announcement was made that a new company had been organized to develop the *Florence* mine. According to information received the new company is the Kootenay-Florence Mining Company, Limited, with a capitalization of $600,000. It is understood that D. L. Robinson, of Mapleton, Oregon, has the control and is largely responsible for the financial arrangements.

According to published information the future scheme of development includes the driving of a 3,250-foot tunnel from a point near the lake-level to explore the ground at an additional depth of 550 feet below the present workings. Large ore-bodies were developed in the upper workings and the property has decided potentialities for becoming an important producer. This work is being undertaken on the advice of A. G. Larson, who is the consulting mining engineer for the company.

On the east side of Kootenay lake the Consolidated Mining and Smelting Company is doing some diamond-drill work on the *Kootenain* group in the vicinity of Kootenay bay.

On Woodbury creek the *Violet*, situated at about 15 miles up the creek, was acquired by J. Henry, W. G. McLanders, and Dan McLennan. The vein is a small fissure in granite carrying high silver values. The results of the season's work are said to have been highly satisfactory and it is anticipated that shipments will be made next year. The property is described in the Annual Report for 1921.

Silver Hill.—W. J. Williams and associates operated this property, which is situated near Crawford bay, during part of the year under lease and bond from the owners, the Bank of Montreal. Twenty-five tons of silver-lead ore was shipped. For a description of the property *see* the Annual Report for 1917.

Silver Bell.—This property, near the head of Spring creek, was prospected during the summer months by J. W. Mulholland on behalf of Portland capital. The ore is silver-lead. Considerable prospecting was also done by Mulholland in the Crawford Creek-Kootenay Bay area.

Lookout Group.* This property, consisting of the *Lookout*, *Lookout No. 2*, *Lookout No. 3*, *Goat Cliff*, and *Rainbow*, is situated in the angle of the forks of Fry creek, some 6 miles back from Kootenay lake. During the spring and summer months the owners, D. M. Wadams and associates, of Johnson Landing, completed repairing the Fry Creek trail, large sections of which had been taken out by high water in the creek. Pack-horses are now used to take supplies up Fry creek instead of by the difficult and hazardous route over the Kootenay Joe pass, which in the last few years has been the only way.

The formation of the area is chiefly granite containing eroded remnants of schists and altered sedimentaries. The claims are staked along a pyritized zone in siliceous and calcareous schists following the granite-contact in a south-easterly direction along the South fork of Fry creek. The workings, consisting of short tunnels, a shaft and open-cuts, develop the pyritized contact for some 3,000 feet in length. Most of the underground work has been done on the *Lookout* on the steep hillside above the forks.

The mineralization, chiefly contained in and conforming to the bedding of the altered sedimentaries, but occasionally in the granite, consists of masses and disseminations of auriferous

pyrite associated with quartz and siliceous gangue. Judging from the few samples taken by the writer, the gold values in the sulphide material are too low to be of interest, but gold colours can be panned from leached and decomposed material where local concentration of gold has occurred through oxidation of the iron sulphides. This condition occurs in numerous places and, erosion having taken place on a large scale, decomposed fragments of this oxidized material are strewn about the flat below the workings.

The attention of prospectors was drawn to the placer-mining possibilities of the ground. Apparently, however, there were too many boulders to contend with and the smooth granite bed-rock of the creek-bottom afforded no crevices for the retention of rich pay. After considerable preliminary panning and prospecting, Wadams and associates found the source of the placer gold in the outcrops on the hillside above.

In addition to the mineralization described above, there have also been found narrow seams and fractures, cutting across the trend of the rocks, containing gold values in decomposed siliceous gangue. A sample across one of these fractures, 6 inches wide, assayed: Gold, 2.84 oz. to the ton.

The area is being very actively prospected by the owners, who have done a considerable amount of work, including construction of a cabin, bridges, and trails.

Pegleg.—D. M. Wadams and associates also own a molybdenite property, the *Pegleg*, situated at a high altitude near the head of the South fork of Fry creek, which could not be examined at that time of year (April) on account of snow.

Kaslo.

Keen Creek (South Fork of Kaslo Creek).

This well-known creek, on which there are a number of mining activities each year, is called Mansfield creek on the Geological Survey maps; on some of the other Government maps it goes by the name of Keen creek and also the South fork of Kaslo creek. For purposes of this report it is given the name Keen creek, as this is the official ruling of the Geographic Board of Canada.

Cork-Province.

On this property, which is situated at a distance of 4 miles by road from the railway at Zwicky, work was carried on during 1926 and 2,022 tons of milling-ore was shipped to Trail. More capital being required for the development of the ore-bodies at depth, the company was reorganized and it is now stated that arrangements have been about completed for the sinking of a 3-compartment shaft for 300 feet.

It is reported that work was continued at the *Silver Bell* and the *Silver Bear* properties, which are situated close to the road about 8 miles from the railway.

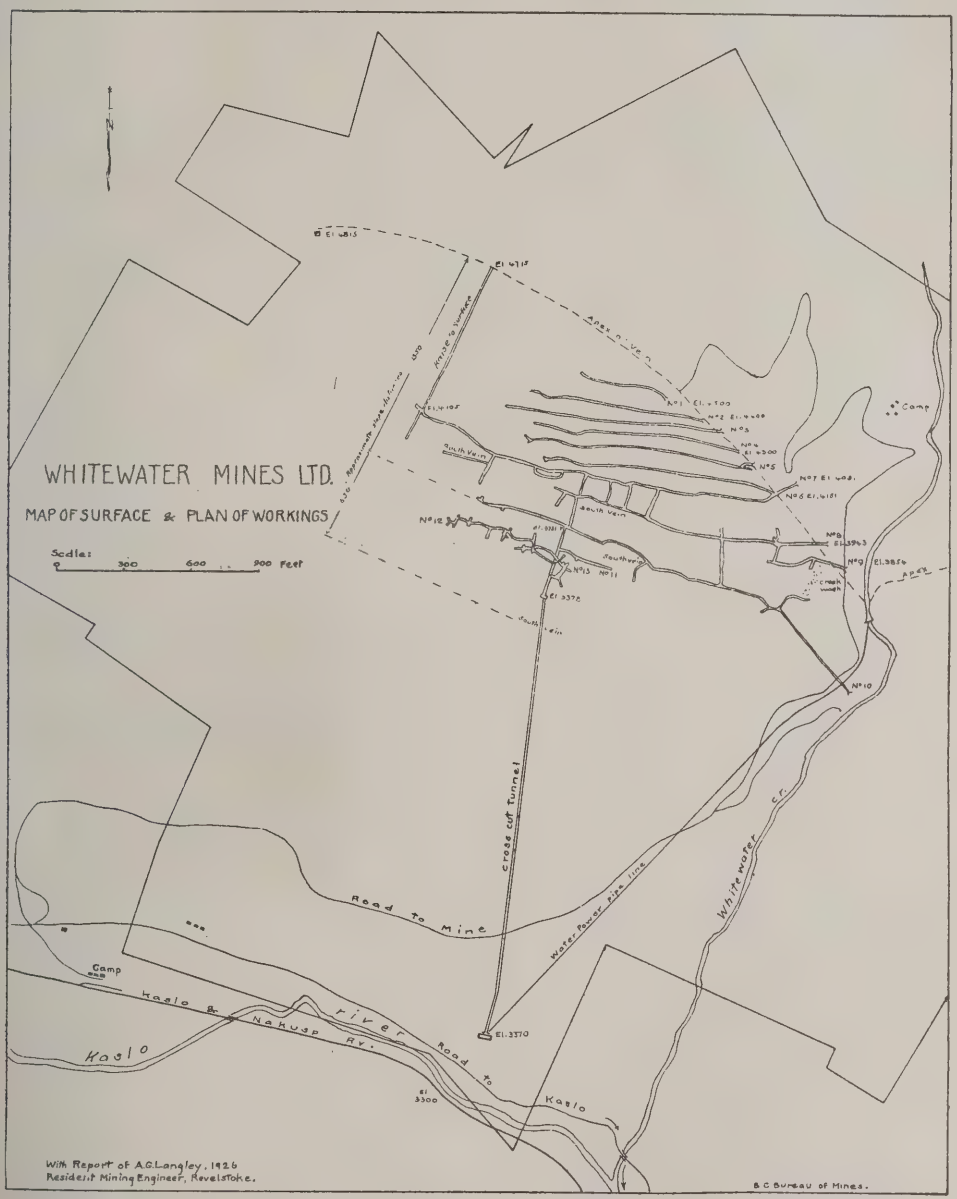
Revenue.—Work was continued by L. McLean, the owner. The trail to this property connects with the wagon-road at a distance of about 10 miles from the railway. The trail to the *Bismark* up Briggs creek was cleaned out and further work done at the property by J. A. McKay and partner.

Daybreak.

This property, owned by the Daybreak Mining Company, in which Portland capital is chiefly interested, is situated on Keen creek, 6½ miles by road from the railway siding at Zwicky. From the road a trail 1½ miles in length leads to the mine. An aerial tramway connecting the mine-workings with ore-bins at the road was under construction during the latter part of the year. A considerable amount of underground work had been done on the property some years ago when it was known as the *Gibson*, but before the production stage was reached it became tied up in litigation and finally forest fires completely wiped out the camp and equipment in 1921. The present company acquired the property in 1923, since which time development has been continued. During the summer of 1926 a hurried visit was paid to the mine and the lower workings, which were considered to be the most important, were examined.

The low level is opened by crosscut from the surface, which intersects a vein known as the "B" vein at a distance of 469 feet from the portal and at a depth of about 185 feet below the next level. At a distance of about 160 feet in, a vein called the "A" vein is intersected and drifted on for about 400 feet, without getting any very definite results. The "B" vein is similar in character to the "A" vein and has been formed along a sheared fault-fracture roughly conforming to the dip and strike of the formation. The filling is composed of sheared and crushed wall-rock, in which ore occurs in small lenses and narrow streaks at intervals. At one

place a small tonnage had been mined to a height of about 30 feet above the drift, but no raising had been done to prove its upward continuity. About 800 feet of drifting has been done on this vein. At the face the formation, consisting of banded limestone, has a strike of N. 50° E. and a dip of 83° to the west. A grab sample from sacked ore at the portal gave the following returns: Silver, 36.9 oz. to the ton; lead, 50.6 per cent.; zinc, 13.4 per cent. During the year 19 tons was shipped to Trail.



Properties tributary to Kaslo–Nakusp Railway.

Whitewater. This mine is owned and operated by the Whitewater Mines, Limited, of which W. H. Burgess, of Kaslo, is secretary and manager. This company was incorporated in 1922 and represents an amalgamation of the *Whitewater* and the *Whitewater Deep*. Its capitalization is $1,200,000, divided into 300,000 preference

shares and 900,000 ordinary shares, all of $1 par value. The property is equipped with a 6-drill compressor driven by water-power from Whitewater creek. The camp buildings provide excellent accommodation for a crew of about twenty-four men. During the year a trestle connecting the low tunnel with a spur of the Kaslo–Nakusp Railway was constructed, thus greatly reducing the costs of loading ore for shipment.

Leasing operations in the old upper workings of the *Whitewater* vein were continued by a dozen or so men and an appreciable tonnage was shipped to Trail. By far the greatest bulk mined, however, was derived by company operations from the large low-grade body of silver-lead-zinc ore which has been developed during the last two years in the lower horizons of the mine-workings—namely, the twelfth and thirteenth levels.

This ore is different in character and occurrence to that mined from the *Whitewater* vein in the area above the tenth level, which heretofore had been responsible for practically the entire production of the mines. Two distinct ore-bodies have, in fact, been developed. That occupying the upper portion of the mine-workings down to the tenth level is known as the *Whitewater* vein and occurs in a strong sheared fracture cutting the formation of slates and having an easterly and westerly strike, with a dip of about 40° to the south. The other ore-body, now being mined below the tenth level, has the character of a replacement deposit and apparently conforms to the strike and dip of the formation, which are respectively about N. 30° W. and 40° to the north-east. Where the *Whitewater* vein and this ore-body intersect the latter is faulted and as yet no work has been done in an endeavour to pick up its continuation on the other side of this fault.

This lower part of the mine-workings, formerly the property of the *Whitewater Deep*, is opened by a crosscut 2,225 feet in length, from the end of which a 4-compartment raise 520 feet in length connects with the twelfth level. From this raise the Nos. 13, 12, and 11 levels were established and a little prospecting done many years ago, with the result that some low-grade silver-lead-zinc and zinc ore was exposed, but was evidently considered too low grade at the time to work profitably and these workings have lain idle until work was recently resumed by the present company. Subsequent development in this section of the mine has been attended by highly satisfactory results.

On the twelfth level an ore-body of about 300 feet in length has been exposed and partly stoped to a height of about 40 feet above the level. The width of this stope, which follows the hanging-wall, is about 10 feet. On the foot-wall side a band of waste 8 or 10 feet thick separates this ore from a similar ore-body of considerable dimensions on the foot-wall, which was being stoped from an intermediate drift between the twelfth and thirteenth levels. In the easterly end of the thirteenth level ore exposed in the face of the drift indicated the continuity of the ore-body in this direction.

The ore being mined consisted of lead and zinc sulphides in a gangue of siderite. The average mill-feed carried about the following values: Silver, 3 to 4 oz. to the ton; lead, 4 to 6 per cent.; zinc, 16 to 20 per cent.; and iron, about 23 per cent. On the eleventh level the main drift was being advanced to the east to explore the downward continuation of the *Whitewater* vein, which had been stoped down to the tenth level. It was estimated this drift had about 50 feet to go to reach its objective.

The recent development-work done at this property has placed it among the most important producers of the district, shipments to Trail during the year amounting to nearly 10,000 tons. According to recent information received it is the intention of the company to erect a concentrator next spring.

Charleston. This mine, which is situated at a short distance from the *Whitewater*, was acquired under option by E. J. Edwards, of Seattle, who succeeded in interesting some American capital. The principal work contemplated was the extension of the No. 5 tunnel to explore the ground below the ore-shoot which had been developed in the "Harris" tunnel, which latter had been driven at an elevation of 180 feet higher up the hill. In order to facilitate this work and allow the proposed installation of an oil-engine and compressor a short length of road was constructed to connect the property with the *Whitewater* road. Unfortunately the funds became exhausted and work was suspended before much progress had been made in the further development of the property. A description of the property may be seen in the Annual Report for 1923.

Metals Recovery Co.

This company, under the management of M. S. Davys, of Kaslo, put in a busy season on the accumulation of tailings from the old *Whitewater* mill, which are distributed over a considerable area along the bed of Kaslo creek. The labour employed was principally Chinese, this being claimed to be the most suitable for this class of work, which consists of digging up and loading tailings that in places had accumulated around old logs and in others become mixed with debris such as collects along the banks of a mountain stream. To transport the tailings to the mill an ingenious contrivance was used—namely, an old Ford car mounted on a truck with flanged wheels running on light rails.

The ore was hauled in side-dumping cars to the mill. Here it was dumped into a pocket and conveyed to the mill-bins by a belt-conveyor. The principal features of the mill, which has a capacity of 60 tons a day, were: To first get rid of the barren coarse material by screening and jigging, the undersize going to a pebble-mill in closed circuit with two King screens, the undersize product from which was treated by flotation, the Callow pneumatic cells being used. The resulting product was a zinc concentrate having values of about: Zinc, 40 per cent.; lead, 7 per cent.; silver, 40 oz. to the ton; and a lead-iron concentrate running about: Lead, 20 per cent.; silver, 80 oz. to the ton; and $5.60 in gold. The ratio of concentration is said to be about 10 to 1. The plant is run by water-power supplied by two near-by creeks.

Vera.

This property is owned by G. H. Murhard, of Three Forks, and is situated at an elevation of about 1,500 feet above the railway on the right bank of Kaslo creek and about opposite Lyle creek. The formation here consists of limestone and slate dipping at a flat angle. In order to explore a small fissure which outcrops in the face of a bluff a tunnel had been driven for a distance of 249 feet. Near the portal a pocket of ore had been encountered at the bottom of the drift; a sample from here ran: Gold, 0.03 oz.; silver, 59.4 oz. to the ton; lead, 56.5 per cent.; zinc, 3.6 per cent. For the remainder of the distance the tunnel follows a narrow stringer, and at 20 feet from the face, where indications looked promising, a raise had been driven for 15 feet. In this raise ore is said to have been exposed in limestone lying next to a porphyry dyke, but unfortunately this showing was obscured by caved ground.

Robb Creek.—A number of properties are located on this creek and in past years the area surrounding its headwaters was the scene of considerable activity. Unfortunately the old workings are now nearly all caved, which makes it difficult for the examining engineer to form an opinion as to the merits of the various properties. However, from what could be seen on the dumps and of the geological conditions, it would appear that some of the workings justify the small expense necessary for reopening in order to allow an examination to be made.

Texas.

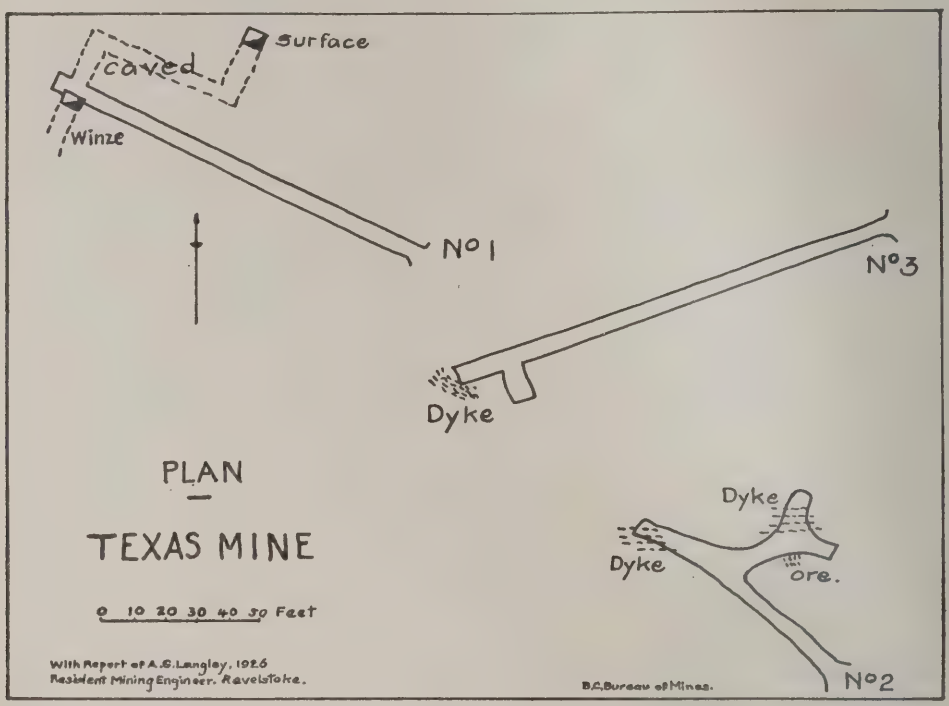
This property is owned by A. T. Garland, of Kaslo, and is situated about 3 miles by trail from the railway at Blaylock, at an elevation of 5,800 feet. The area is underlain by limestone and slates which have been intruded by granite tongues and aplitic dyke-rock. The property was first prospected by a shaft on the outcrop and 17 tons of high-grade ore was extracted in a depth of 70 feet. Following this work the No. 1 tunnel was driven at a depth of 60 feet below the outcrop and connected with the shaft at a distance of 125 feet from the portal. A winze was sunk below the shaft, but the ground around this section of the workings was caved and could not be examined.

The No. 2 tunnel is 80 feet below the No. 1 and has been driven 71 feet in a north-westerly direction. It crosscuts a sheared zone and ends in dyke-rock. At 47 feet from the portal a short drift had been run in this sheared zone and disclosed a little ore lying on the hanging-wall side of the dyke, which latter has an easterly and westerly strike.

As conditions evidently did not appear promising here, another crosscut tunnel was started at the same elevation and at a distance of 140 feet to the north. This had been advanced for 150 feet in slate and ends in dyke-rock. The complex geological structure due to intrusions of dyke-rock and the resulting contortion of the sediments add to the difficulties of forming an opinion as to the possibilities, while the workings do not throw much light on the character of the deposit.

However, the following conclusions were arrived at: It is possible that the ore-bearing zone will be found to lie in a sheared zone formed along the contact of the slate and dyke, which latter has, as far as could be ascertained, a strike of east and west and a dip of 60° to the south.

Should this be the case the No. 3 crosscut, if continued through the dyke, would intersect this zone on the south side, while further prospecting in the No. 2 tunnel along the hanging-wall side of the dyke would appear to be advisable. J. Harris and partner, who were working at the property, recently constructed a new cabin near the workings.



Fourth of July. This claim, situated near the head of Robb creek, adjoins the *Texas* to the south. It is an old Crown-granted claim on which work was done many years ago but is now lying idle. Ore was first found at the surface in a sheared fissure in slate near a granite-contact and after prospecting by trenching and open-cuts, from which a small tonnage of high-grade silver-lead-zinc ore was extracted, a crosscut tunnel was driven at a depth of 80 feet below the outcrop. This crosscut, which has a length of 108 feet, first penetrates granite and then enters sheared and highly metamorphosed slates in which the vein occurs. Drifting for 192 feet in a direction of S. 45° W. disclosed the vein-filling to occupy an apparent width of about 5 feet and to consist of sheared slate carrying bands of oxidized vein-matter and some spathic iron.

This drift appeared to be in the hanging-wall side, as the foot-wall was indefinite. While the vein-matter was well mineralized with iron, the only ore seen was exposed in the foot-wall side, where a 4-inch stringer was uncovered but not prospected at a distance of 72 feet from the crosscut. A sample taken here ran: Gold, 0.01 oz.; silver, 24.7 oz. to the ton; lead, 10.5 per cent.; zinc, 21.7 per cent.

Near the end of the crosscut a winze had been sunk, indicating the presence of an ore-shoot at this point, but this could not be examined on account of water.

At the outcrop the vein can be traced by open-cuts for 200 feet. These surface showings have a width of about 5 feet of oxidized ledge-matter, in which streaks and bunches of galena occur. A sample of this material ran: Gold, 0.01 oz.; silver, 18.9 oz. to the ton; lead, 21.3 per cent.; zinc, 3.7 per cent.; while a sample from a small pile of sorted ore gave the following returns: Gold, 0.02 oz. to the ton; silver, 128.5 oz. to the ton; lead, 62.8 per cent.; zinc, 7.6 per cent. On the dump from the tunnel there are a few tons of milling-grade ore scattered around; a grab sample of the best-looking material ran: Silver, 17.6 oz. to the ton; lead, 9.3 per cent.; zinc, 13.8 per cent.

Paint Lake, Arrow Lake M.D.

Kaslo, B.C.

Boadicea. This claim is situated on the right bank of Robb creek and opposite to the *Fourth of July*. The formation underlying the area, consisting of slate and limestone, has been intruded by tongues of granite. The workings of the *Boadicea* are in the sedimentary rocks, judging by surface indications and the material on the dumps. The vein, which can be seen cutting a high bluff, has been explored by a number of tunnels over a vertical depth of 600 feet. Unfortunately the most important of the underground workings were in a caved condition, hence could not be examined. On the dump of the lowest tunnel there was a considerable quantity of spathic iron, turned black by oxidation, with which was associated galena and zinc-blende. A sample taken of this ore ran: Silver, 6.4 oz. to the ton; lead, 5.2 per cent.; zinc, 10.2 per cent. As this tunnel was probably only caved at the portal it could be reopened at small cost, and conditions appeared to justify such work being done in order to allow a thorough examination to be made. The property was lying idle, no work having been done for a number of years.

Caledonia.* This property, owned by Geo. E. McCready, is situated on the left bank of Kaslo creek, just above Blaylock Siding, to which it is connected by trail. The formation, composed of rocks of the Slocan series, strikes north-westerly, with steep dip to the south-west. The ore, which occurs in a fissured zone in carbonaceous limestone, varies from streaks of clean galena and zinc-blende to several feet in width of mixed sulphides in a gangue of calcite, quartz, and spathic iron. On the surface there are two 20-foot shafts, a short tunnel, and numerous open-cuts exposing oxidized ledge-matter mineralized in places with galena and zinc-blende.

The lowest working is a crosscut 140 feet long, from the inner end of which short tunnels have been driven north-westerly and south-easterly. In the south-easterly drift a raise has been put up 65 feet to the surface, from which a small amount of stoping has been done. Just below the raise a winze has been started from the floor of the tunnel. Samples taken on the lower tunnel level assayed:—

Description.	Gold.	Silver.	Lead.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.
Across 12 inches in bottom of winze	0.04	15.4	16.6	34.3
Across 20 inches in north-westerly drift (part of a width of from 4 to 5 feet of sparsely disseminated mineralization)	0.02	10.6	12.4	20.1
Across 3 feet on the north-west side of raise, 18 feet up from tunnel	0.06	38.4	26.1	12.8

The lower tunnel dump apparently contains an appreciable tonnage of ore, mixed with waste, which the owner was preparing to sort out for shipment to the smelter as milling-ore. A 64-lb. sample representing this ore in the dump shipped by him to Trail for a mill test assayed: Gold, 0.02 oz. to the ton; silver, 14.4 oz. to the ton; lead, 11.3 per cent.; zinc, 18.4 per cent. The result of the test indicated that, in spite of the ore on the dump having been exposed to oxidation for a number of years, a very good separation and recovery could be made.

Panama.—This group, owned by H. Giegerich, of Kaslo, is situated near Bear lake. The trail was repaired and further development was undertaken. The ore is a "dry" silver ore similar in character to that of other properties on London ridge.

Rainbow and Central.* These claims, owned by W. Anderson, of Kaslo, are situated in the angle of the forks of 12-Mile creek, some 4¾ miles up the *Utica* road from Adamant Siding. A short length of trail connects the cabin by the roadside with the lower tunnel at an approximate elevation of 5,950 feet. The property was worked during 1926 by L. Johnson, A. Johnson, A. Wall, and G. Larsen under lease and bond. The formation consists of rocks of the Slocan series which have been considerably disturbed by near-by intrusions of granite.

Several veins, varying in width from a few inches to several feet, occupy fissures in the schist country-rock, which strikes S. 35° W., with a very steep dip to the south-east. The ore is galena and zinc-blende in a gangue of altered silicified country-rock.

The main working is a crosscut tunnel driven 130 feet to a vein, which was drifted on a short distance to the south-west. This drift-tunnel is just below a rock-slide and the ground, in which some stoping was done, is loose and broken. The ore in this working, consisting of galena and carbonates in a decomposed gangue, apparently occurs in bunches and small lenses.

A sample of galena sorted for shipment assayed: Gold, 0.06 oz. to the ton; silver, 121.3 oz. to the ton; lead, 71.2 per cent.; zinc, 1.1 per cent. On the same level another short tunnel run westerly in blocky schists cuts a narrow vein sparsely mineralized with zinc-blende. On the steep mountain-side above the lower tunnel a short tunnel, a 40-foot shaft, and open-cuts develop small fissure-veins, from which small amounts of ore have been extracted at times.

A shipment of 5 tons was made by the above leasers.

Mohawk.* This property, owned by Ray Hughes, of Kaslo, is situated above and adjoining the *Rainbow* and *Central* and in the same formation (Slocan series). No work was being done at the time of the writer's visit in July, but subsequently the trail, 1 mile in length from the *Utica* road, is reported to have been cleaned out preparatory to further work. J. Chisholm shipped 12 tons of silver-lead ore from this property in 1919.

California Group, Marble Arch and Big Ben Claims.* The *California* group consists of the *Tunnel Site*, *Lead Horn*, and *California* claims, owned by John Koski. The *Marble Arch* and *Big Ben*, adjoining the *California* group, are owned by W. R. Hunter and O. A. Tapanila. The properties are situated on the western side of 12-Mile creek and adjoin the *Utica* road about 1¾ miles from the Canadian Pacific Railway. The claims extend up the steep mountain-side from the creek at about 3,600 feet elevation. The rocks of the area, classified as the Slocan series, include carbonaceous limestone, schist, quartzite, and slate intruded by granite-porphyry dykes and tongues from the Nelson batholith.

On the *California* group the workings, chiefly on the *Lead Horn* claim, develop a fissured band of limestone from 11 to 20 feet wide, altered and schistose in places, with which porphyry dykes are associated. The strike of the limestone is N. 30° W. and the dip is from 55° to 60° to the north-east. The mineralization consists of occasional sparsely disseminated galena and zinc-blende and in places there are "iron-cappings." The workings, which are only superficial, are as follows:—

A shaft at the upper end of the *Lead Horn* claim sunk in oxidized ledge-matter following the discovery of mineralized "float." Close to the shaft a tunnel was driven in loose ground containing some galena. Lower down the mountain-side a tunnel has been driven 60 feet on the "Big" vein, which is here about 20 feet wide, consisting of limestone and calc-schist considerably iron-stained in places. Some disseminated galena occurs in places in oxidized ledge-matter.

Still farther down the mountain and near the cabin a tunnel has been driven 57 feet on the vein, which at this level is 11 feet wide and shows the same characteristics as in the tunnel above.

The *Marble Arch* is started on the upper or north-westerly extension of the *California* vein, which, however, has not been opened up on this claim. A shallow shaft and two short tunnels develop a quartz-filled fissure containing streaks of high-grade ore. The country-rock is calc-schist.

At the top of the shaft the vein is merely a seam which widens out at the bottom of the shaft, where some 4 inches of clean galena and grey copper assayed: Gold, 0.14 oz. to the ton; silver, 393.6 oz. to the ton; lead, 70.3 per cent.; zinc, trace.

No ore of importance is developed in the two short tunnels below the shaft, but the cleavage is well defined. The *Marble Arch* vein is striking N. 70° E. towards the extension of the "Big" vein (*California* group vein), which lies a short distance away from and below it. The dip is 50° to the south-east.

The *Big Ben* faces 12-Mile creek and adjoins the *Lead Horn* of the *California* group to the south-west. On this claim there is a vein, mineralized with galena, in granite. The vein, which is from 18 to 20 inches wide where examined, strikes N. 75° E. towards the *California* group vein. The dip is 67° to the north-west. The mineralization occurs in stringers and masses of clean galena associated with iron pyrites and small amounts of quartz in a granitic gangue.

At 5,250 feet elevation a shaft was sunk 20 feet on ore, which pinched out at the bottom. A grab sample from a pile of some 2 tons of sorted ore near the collar of the shaft assayed: Gold, 0.12 oz. to the ton; silver, 94.5 oz. to the ton; lead, 81.2 per cent.; zinc, 0.9 per cent.

Howser Lake and Vicinity.

Surprise. This group, comprising three Crown-granted claims and a fraction, is owned by F. A. Devereaux, of Victoria. During the early part of the year it was acquired under the terms of an option by R. K. Waite, of Nelson, who interested Chicago capital for its development. The property is situated on Glacier creek at a distance of approximately 3 miles by trail from the Howser–Argenta wagon-road. The camp is situated in the creek-bottom at an elevation of 2,400 feet above sea-level (aneroid). A steep trail leads to the workings, which are situated on the wooded side-hill at an elevation of 3,700 feet.

The principal workings consist of two adit-tunnels, the No. 1 and No. 4. The No. 1 tunnel had been driven for 70 feet in a direction of N. 25° W., then runs due north for 100 feet. For the first 100 feet the drift follows a strong quartz vein with an apparent dip of 40° to the east and occupying a fractured zone in argillites. Where the quartz has been subjected to cross-fracturing and shearing movements the mineralization, consisting principally of grey copper, is more pronounced, and where these conditions prevailed an ore-shoot of about 50 feet long had been stoped to a height of about 20 feet above the drift. The average width of the vein in this stope was from 4 to 6 feet, with a narrow streak of ore along the foot-wall, the balance of the vein being sparsely mineralized massive white quartz. Where the quartz had been fractured near the foot-wall it contained inclusions of country-rock and seams of graphitic material along the cleavage-planes. A sample taken in the roof of the stope along the foot-wall streak gave the following returns: Gold, 0.04 oz. to the ton; silver, 34.96 oz. to the ton; lead, 0.04 per cent.; zinc, 1.8 per cent. Much higher returns might be expected from picked samples of the ore high in grey copper. It is quite apparent from the character of the vein that careful mining and sorting would be necessary to obtain a shipping product.

The downward continuation of this body of quartz had been prospected by two winzes, 32 feet apart. This work leaves doubt as to the persistency of the vein with depth and failed to disclose the true hanging-wall.

For the first few feet below the drift 3 or 4 feet of good ore is exposed, which narrows down to 16 inches at a depth of 25 feet and is then interrupted by faulting movements. A sample taken across this width gave the following returns: Gold, 0.07 oz. to the ton; silver, 52.92 oz. to the ton; lead, trace; zinc, 0.7 per cent.

The No. 4 tunnel had been driven at an elevation of 110 feet below the No. 1. The writer was informed that the total length of this tunnel was 410 feet, but time did not allow its measurement. Apparently this tunnel, which roughly parallels the direction of the vein as exposed in No. 1, had been driven in the foot-wall.

At a distance of 225 feet from the portal a crosscut tunnel had been driven in a direction of N. 65° E. This cuts a strong quartz vein, which is probably the same as that developed in the upper tunnel. At this point it is only slightly mineralized and no drifting had been done on it. Continuing past this crosscut, the main tunnel swings to the north and discloses what was considered to be the continuation of the vein exposed in the crosscut. Here the quartz is sparsely mineralized with zinc-blende.

Another vein which was exposed in a tunnel some 200 feet to the east of No. 1 tunnel was examined, but without an examination of the surface geology the importance of this showing and that of the work being undertaken to explore by a new tunnel lower down the hill the possible intersection of two veins could not be appreciated.

During the short stay at the property on this occasion the impression was gained that not as much work had been done to develop at depth the ore-shoot exposed in the No. 1 tunnel as conditions would appear to warrant and that future development could probably be done to best advantage from the No. 4 level.

Glacier Creek.* This property, consisting of the *Glacier* and *Summit*, owned by W. L. Smith, of Lardeau, is situated on the north-western side of Glacier creek, which flows into the Duncan river south of Howser lake. The claims are staked up the steep mountain-side to the summit of the ridge separating Glacier creek from Howser lake. The workings, consisting of some open-cuts and a short tunnel lying between the creek and a point about 700 feet vertically above it, develop a wide mineralized zone in limestone. The mineralization consists chiefly of scattered bands and streaks of a fine-grained mixture of zinc, lead, and

iron sulphides, occurring as replacement deposits in the lime-bands. The following samples were taken:—

Description.	Gold.	Silver.	Lead.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.
Across 6 feet in open-cut highest up the hill	0.02	0.55	3.8	18.1
Grab sample from small pile on dump at lowest working	0.01	0.85	9.5	14.4
Sample of ore sorted for test shipment	0.01	0.50	13.0	29.2

The work done is not sufficient to prove the continuity of the mineralization, which appears to be strongest at the highest workings.

Amato, Ruby, etc.*

On the north-westerly extension of the same limestone-belt six claims were staked last summer by J. S. Hincks and W. C. P. Heathcote: The *Ruby* and *Amato*, jointly owned by both men; the *Eileen* and *Marjorie*, owned by Hincks; and the *Ruby* and *Anne*, owned by Heathcote. The claims extend from the summit of the ridge above the *Glacier Creek* to Hinck's ranch on the south bay of Howser lake. The workings, consisting of open-cuts, are mostly on the *Amato*, *Eileen*, and *Marjorie* claims at elevations from 250 to 750 feet above the lake. The character and occurrence of the ore in these workings are the same as on the *Glacier Creek*, the mineralization also occurring in streaks and bands of mixed lead, zinc, and iron sulphides in oxidized calcareous gangue and limestone. The following samples were taken from open-cuts on the *Marjorie* and *Amato* claims:—

Description.	Lead.	Zinc.
	Per Cent.	Per Cent.
Across 6 inches of oxidized and decomposed material on hanging-wall of open-cut on Marjorie claim, 750 feet above lake (3 feet parting of waste)	14.1	12.6
Across 12-inch centre band in same open-cut; disseminated iron, lead, and zinc sulphides and oxidized material (2 feet parting of waste)	7.1	2.8
Across 15-inch band on foot-wall side of same open-cut; disseminated sulphides with some oxidized material	12.2	21.3
Across 18 inches in open-cut on Amato claim, 250 feet above lake	14.8	14.7

The gold and silver values in the samples were negligible.

The rocks, which strike north-westerly with steep dips to the north-east, form the low hog-back ridge on the eastern side of the lake between the south and north bays. Along this ridge are situated the claims of G. H. Scott, the Matthews Bros., and J. N. Watson (*Lakeside No. 1* and *No. 2*, etc.). These claims are staked along the ridge, which parallels the lake for several miles, its summit being only a few hundred feet above the water-level. Along the ridge and on both sides of it a few open-cuts have been made in limestone mineralized in places with low-grade disseminated lead, zinc, and iron sulphides. The mineralization in the limestone-belt, therefore, is found at long intervals over a length of between 4 and 5 miles at the several properties mentioned above, including the *Glacier Creek*.

Scarcely any work has been done to prove the continuity of the various showings as yet. Nothing definite is in sight, but where mineralization is found at intervals over such a long distance careful exploratory work would seem to be justified with a view to locating ore-bodies of commercial grade and proportions.

Other Activities.

The *Lavina*, between Hamill and Glacier creeks, was operated by E. Nordman and associates. Improvements were made to the trail and it is expected that ore will be shipped during the winter.

Silver-lead claims have been staked on Boulder creek, upper Duncan river, by H. Hincks, Hugh McKay, and Sam Luffman.

John Noihl worked the *International* on the upper Duncan and C. O. Woodrow, of Nelson, acquired claims on the extension of the same silver-lead vein.

R. S. Gallup worked all summer on the *President* group near the north end of Howser lake.

The *Ruth* and *Florence*, on the south bay of Howser lake, were worked by J. Rady and John Noihl.

A shaft, reported to be 70 feet deep, has been sunk on the *Red Elephant* gold property of Hall creek, which has been bonded by McKay & Power to J. Morris and associates, of Spokane.

On *Gertrude* creek, upper Duncan river, D. D. McPhail has restaked the *Mabel*, *Maude*, and *No. 2* claims, owned by him jointly with Jack Healy and J. M. Gillis. The claims are on the northern side of the creek at an elevation of 6,700 feet, or about 5,000 feet above the river. A temporary camp was established at the mouth of the creek preparatory to opening up the old trail, about 3 miles in length. Some old superficial workings develop two veins, one of them containing values in gold, copper, and silver, and the other being a vein of iron sulphides with which gold values are associated.

At the Bullock Gold Mines' property near Poplar it is learnt from sources which are considered to be reliable that the last work done on the property was the driving of a tunnel 175 feet in length from a point near the camp-level, and that no important discoveries had been made since the property was reported on in the Annual Report for 1920.

Unfortunately time did not permit a visit to this section of district during the season, but it is understood that the usual amount of prospecting was carried on.

List of Shipping-mines in the Ainsworth Mining Division, 1926.

Mine.	Locality.	Tons.	Character of Ore.
Bluebell	Riondel	31,030	Silver-lead-zinc.
Charleston	Retallack	31	Silver-zinc.
Cork-Province	Zwicky	2,022	Silver-lead-zinc.
Daybreak	Zwicky	19	Silver-lead-zinc.
Metals Recovery	Retallack	16,368	Silver-lead-zinc.
Rainbow	Zwicky	5	Silver-lead-zinc.
Silver Hoard	Ainsworth	24	Silver-lead.
Spokane-Trinket	Ainsworth	67	Silver-lead.
Surprise	Howser	6	Silver.
Tariff	Ainsworth	98	Silver-lead-zinc.
Whitewater	Retallack	9,839	Silver-zinc-lead.
Lake Shore		14	Silver-lead.
Jeanette		11	Silver-lead.
Silver Hill		25	Silver-lead.
Total		59,559	

REVELSTOKE, LARDEAU, AND TROUT LAKE MINING DIVISIONS.

Although the interest in mining has not been as active as conditions would appear to warrant in the Revelstoke Division, nevertheless there have been more men employed in the industry than for a number of years past, and the prospects are that conditions in this respect will be at least as good during 1927 and in all probability will shown an improvement.

The wagon-road which is gradually being extended up the Columbia river into the Big Bend country has already been a great benefit to prospectors and others who have interests in that part of the district. This road is now constructed to a point a few miles past LaForme creek.

For a time the interest of mining men and others was chiefly centred on the operations being undertaken by the Porcupine Goldfields Development and Finance Company at the *J. & L.* group, situated on Carnes creek and owned by I. McBean, where a crew of about ten men was put to work at driving a low tunnel. After accomplishing a limited amount of work the option was relinquished; the complex character of the ore, rather than the ore occurrence itself, is the principal reason given for the abandonment of the property; for reference *see* the Annual Report for 1922.

At the *Woolsey* on Silver creek the Bernier Metals Corporation, of Vancouver, had a crew of about fifteen men working for the greater part of the year under the management of R. F. Hill. New cabins were built at the mine, 7½ miles of telephone-line was constructed, extensive improvements made to the trail, and a loading shed and platform was built at the railway-track. Underground development consisted of driving a tunnel at a vertical depth of 500 feet below the old tunnel driven by the late Dave Woolsey, who owned the property.

This new tunnel lies at a distance of 1,045 feet to the north-east of the portal of the upper tunnel and was driven in a direction parallel to the strike of the vein for a distance of 200 feet, at which point a crosscut had been started and advanced for 152 feet; this has still 450 feet to go to intersect the downward projection of the vein. Work on this was discontinued towards the end of the season pending the installation of a compressor, as the ground became too hard to allow good progress by hand-drilling.

Quartz-outcrops indicated that there are good possibilities of other veins being intersected by this crosscut; in fact, one large body of quartz slightly mineralized had already been encountered. To provide air for this tunnel an 8-horse-power Vickers-Petters oil-engine and a 30-inch ventilating-fan had been installed.

Other work consisted of exploration on Tangier creek (the North fork of the Illecillewaet river), where ten additional claims were staked, making a total of forty-two claims controlled by the company. It is understood some strong quartz veins were uncovered and the results of the initial work were encouraging. For further reference to this property *see* the Annual Report for 1919.

Silver Gland.—At this property, on Tangier creek, J. H. S. Munro, of Revelstoke, had a crew of five men employed at prospecting and development. The trail was repaired and a new cabin built. The ore is reported to be high-grade silver-lead.

Wigwam.—A small crew of men was employed during the year at exploration and development under the direction of W. T. Dumbleton, of Tacoma.

Placer-mining.

On French creek the French Creek Development Company had a small crew of men engaged at building a flume and making preparations for hydraulicking, under the direction of F. N. Remillard. W. J. Smith and several partners, who put in a season on their placer lease on McCullough creek, report that the season's work was very satisfactory. A good deal of time was necessarily taken up in cutting out old grown-over trails, building a cabin, and whipsawing lumber for the sluice-box, etc. It is reported that washing operations were started in September and the returns were very encouraging. The gold is said to be mostly coarse. It is intended to continue operations next season.

LARDEAU MINING DIVISION.

There was more activity around Camborne this year than there has been for many years past; this was due to a larger crew of men being put to work on the *Multiplex*, where some high-grade ore was mined and shipped to Trail; while later in the year F. R. Blockberger succeeded in interesting some American capital in the *Teddy Glacier*, with the result that more men were put to work and pack-trains were busy taking up supplies to the property.

The Lardeau Mines Exploration Company, with head office in the North-West Building, Vancouver, has acquired options on a number of properties, on which it is intended to do initial development-work, with a view to ultimately turning them over to the larger operating companies. So far most of the properties acquired by this company are tributary to Incomappleux creek. Late in the season work was started on the *Paymaster*, just beyond the 12-Mile bridge on Incomappleux creek. Here a crosscut tunnel is being driven to tap showings exposed on the bluffs above. A little work was also done by this company on the *Moscow* group on Poole creek. It is understood that other properties have been acquired near Ferguson.

Multiplex. This property is owned by the Multiplex Mining, Milling, and Power Company, capitalized at $1,000,000 in shares of $1 each. O. T. Bibb is president and manager. The property consists of a large group of claims situated on Poole creek, about 2 miles from Camborne. Small-scale development has been carried on for some years and for the first time in the history of the present company important shipments were made to Trail, the first shipment being mined from the upper workings. It is not known at

present what success was attained at other workings which were being driven to tap the ore-body at greater depth.

At the uppermost working about 60 feet of drifting from the surface had disclosed a short lens of ore having a maximum width of 3 feet. This had been followed down for 6 feet, but the winze was full of water. In the face of the tunnel, about 5 feet from the winze, a streak 3 inches in width was exposed and a sample taken here gave the following exceptionally high returns: Gold, 0.14 oz. to the ton; silver, 611.8 oz. to the ton; lead, 39.1 per cent.; zinc, 3.2 per cent. A sample taken from the bottom of the drift at the edge of the winze ran: Gold, 0.12 oz. to the ton; silver, 307.7 oz. to the ton; lead, 70.5 per cent.; zinc, 6.4 per cent.

The first car-load of ore of 35 tons gave the following assay returns: Gold, 0.07 oz. to the ton; silver, 150.7 oz. to the ton; lead, 23.6 per cent.; zinc, 19.3 per cent.; iron, 8.5 per cent. This ore apparently occurs at the intersection of two veins, for in one side of the drift at the winze there is evidence of another vein striking at an acute angle to the one drifted on and mineralized across a width of 5 feet with lead, zinc, and iron sulphides in a quartz gangue. A sample across this width gave the following returns: Gold, 0.02 oz. to the ton; silver, 37.5 oz. to the ton; lead, 11.7 per cent.; zinc, 20.4 per cent.

A tunnel was being driven at a point 50 feet below to tap the downward projection of this ore and at 113 feet lower down the old workings were being extended. In these latter workings a small stringer had been encountered and further development was awaited with interest. A sample taken from this stringer at the face of the tunnel ran: Gold, 0.08 oz. to the ton; silver, 45.2 oz. to the ton; lead, 3.1 per cent.; zinc, 17.5 per cent. Improvements were made to the trail and new camp buildings were erected. For further reference *see* the Annual Report for 1924.

The following are among the other activities reported: Duncan McIntosh put in a season at the *Lead Star* on Stephney creek. The Consolidated Mining and Smelting Company had a small crew employed at exploration-work on the *Big Showing*, which is held under option from the owner, John Leask, of Cranbrook. The Imperial Syndicate, of Nelson, which controls the *Eva* and *Cholla* groups, had some of the old tunnels cleaned out to allow an examination of the property to be made and did further prospecting on the *Cholla*.

Teddy Glacier.* This property, situated at the head of the Middle fork of Sable creek, some 13½ miles by road and trail from Camborne, was described in the Annual Report for 1925. During 1926 the property was acquired by F. R. Blockberger, of Vancouver, and associates, of Detroit and Buffalo, who have been working the property since the fall of the year. The trail was improved throughout and temporary camps were established, including the building of a cabin to accommodate a few men close to the workings at 7,500 feet altitude.

Late in the fall a new showing of silver-lead ore was found in a parallel fracture some 150 feet farther up the mountain from the lower showings and about 60 feet vertically above them. At the time of the writer's visit in October a short length, some 25 feet, of this showing was exposed, the north-easterly end of it running in under the shallow ice on the rim of the main glacier. The width of the showing was from 3 to 6 feet, consisting of masses of galena and pyrite in a quartz gangue.

A sample of galena and pyrite, free from gangue, from the new discovery assayed: Gold, 0.10 oz. to the ton; silver, 36.1 oz. to the ton; lead, 68.7 per cent.; zinc, 0.2 per cent. A sample of iron pyrites, clean as possible from galena, with a small amount of associated quartz was taken from the new showing to get an idea of the gold content of the pyrite. This assayed: Gold, 0.51 oz. to the ton; silver, 3.7 oz. to the ton; lead, 0.3 per cent. A sample of iron pyrites and quartz from the "big showing" farther down the hill assayed: Gold, 0.76 oz. to the ton; silver, 0.3 oz. to the ton. The last two samples, confirming results obtained in 1925, indicate that the iron pyrites, which are very plentiful in the surface exposures, carry appreciable gold values, which should be of importance if tonnage is developed justifying milling plant.

A crosscut was started by hand which will gain about 35 feet of depth on the "big showing" and close to 100 feet depth on the new discovery. Since the property was described in 1925 new stripping on the main fracture containing the "big showing" has exposed ore almost continuous for 200 feet in length. Similar ore, consisting of masses of galena and pyrite, has also been exposed in small veins and stringers running in various directions from the main system of fracturing.

It is reported that the work was temporarily discontinued when the snow got too deep. Results of development will be awaited with interest, as the proving of large ore-bodies on the *Teddy Glacier* should go a long way towards reviving interest in the Camborne mining camp.

TROUT LAKE MINING DIVISION.

There was about the usual amount of prospecting and mining carried on in this Division during the season, but no new work or developments of outstanding importance have been reported. However, there have been a number of inquiries about properties and the "old-timers" are looking forward to a much busier season in 1927.

True Fissure. This property is owned and operated by the True Fissure Mining and Milling Company, of Cincinnati, Ohio. It consists of a group of eight Crown-granted claims and fractions, situated a short distance from Ferguson. For a number of years a small crew of men has been steadily employed at development with the object of blocking out sufficient tonnage to warrant the erection of a concentrator, tramway, etc., for the ore so far developed is essentially of milling grade and transportation costs and lack of facilities do not allow shipping this character of ore. As mining has been done entirely by hand-work, progress has naturally been slow, but good, considering the method of mining.

During the year development was confined to the *Bluebell*, adjoining the *True Fissure* to the west. Here a 168-foot raise had been driven from the low tunnel to the upper workings. In the low tunnel ore of possible milling grade is exposed in the bottom of the drift for a length of about 50 feet; this level was being advanced in a north-westerly direction. The raise between the two levels follows a streak of zinc-blende of varying widths up to 3 feet. At 110 feet above the level a short intermediate drift exposes a nice showing of good-grade zinc ore having a width of 3 feet.

On the upper level a streak of a finely crystalline mixture of zinc, lead, and iron sulphides having a width of from 18 inches to 2 feet and length of 150 feet is exposed by the drift. A sample taken at random along the length of this ore ran: Gold, 0.08 oz. to the ton; silver, 22.5 oz. to the ton; lead, 9.7 per cent.; zinc, 26.9 per cent. This is of excellent milling grade and with the healthy mineralization here and at other places on the property there should be a good chance for the development of a considerable tonnage. Dave Morgan, of Ferguson, is in charge of the work. For further reference *see* the Annual Report for 1921.

Mohican. The Mohican Mining Company, of Vancouver, which is capitalized at $500,000, divided into 2,000,000 shares of 25 cents each, owns this property. It consists of three Crown-granted claims situated on Gainer creek at an approximate distance of 7 miles by trail from the wagon-road up Silver Cup (South fork of Lardeau) creek. The camp, consisting of a bunk-house and cook-house, provides accommodation for six men and is situated near the workings at an elevation of 6,300 feet.

The old workings, consisting of open-cuts and trenching at the outcrop of the vein, are now all filled in and no ore was visible. From an examination of conditions here and underground it was apparent that shearing and faulting movements had taken place along the line of weakness formed by the vein, which latter was broken and of doubtful continuity. A remnant of quartz on the foot-wall side of the vein, having withstood erosion, was exposed near where the old surface work had been done; it had a strike of N. 75° W. and a dip of 80° to the south-west.

Farther down the hill an old tunnel had been driven to develop the surface exposures at a depth of 125 feet; this was caved near the portal and full of water, so was not examined. It is reported (*see* Annual Report for 1914) that 8.8 tons of sorted ore was shipped from this tunnel and yielded: Gold, 0.01 oz. to the ton; silver, 56.3 oz. to the ton; copper, 1.5 per cent.; lead, 27.8 per cent.; zinc, 10.9 per cent. In order to develop the ore exposed in this tunnel at greater depth a crosscut had been started at a depth of 300 feet below the outcrop.

The work done by the company consisted of advancing this crosscut for a total distance of 346 feet in a north-easterly direction. The formation encountered was a black slate-schist. At the end of the crosscut a sheared fissure was encountered and drifted on in an easterly direction for 90 feet, at which point some small lenses of ore were reported to have been exposed, but as the drift was timbered and lagged, little could be seen. Beyond this point soft swelling ground had caved in the continuation of the drift along the fissure, and to avoid these conditions the tunnel had been driven in the foot-wall side and continued for 165 feet, when it was turned back into the line of the fissure and soft ground, which needed close timbering, was again

Multiplex M.M. & P. Co.—Transporting Ore.

Mount Stephen—Fossil Beds at X.

encountered. Nothing of particular interest could be seen in this drift and no appreciable tonnage of ore was noticed on the dumps.

As regards possibilities, it is difficult to express an opinion, for the most important exposure in the upper adit-tunnel was not accessible for examination and the relation between the upper and lower workings could only be determined by a survey, which no doubt the company has had made, but the impression was gained that the low tunnel would have to be extended for a considerable distance to pick up the downward extension of the ore exposed above.

Among the numerous prospecting activities the following have been reported: At the *Big Five* on Ferguson creek (North fork of Lardeau creek) the owners continued development. Several examinations of the property were made by visiting engineers and during the latter part of the season, it is understood, it was acquired under option by McMillan & Trethewey, who intend to operate it next year.

The Blue Jay Mining Syndicate, of Victoria, acquired the *Blue Jay* group of claims at the headwaters of McDonald creek and had them surveyed with a view to getting them Crown-granted. No work was reported to have been done.

J. Lundy, of Penticton, put in a season at prospecting around the headwaters of Ferguson creek.

The *Abbot*, on Healey creek, after lying idle for a number of years, was acquired by E. B. Brauns and A. E. Brauns, who had a small crew of men employed at exploration and development. A small compressor plant is contemplated for 1927.

Several parties examined the deposit of Iceland spar at the head of Lake creek, of which W. Glenn, of Nelson, is one of the principal owners. It is understood that those who visited the property were well satisfied with the prospects and that it is probable an attempt will be made to mine some of this material during the coming year.

Alex. MacLean and associates, of Gerrard, did some work on the *Magnet* claim near Gerrard, which has been lying idle for many years.

The trail to the *Silver Tray* was repaired and further work was undertaken at the property, which belongs to J. Parisian and associates, of Gerrard.

R. Yuill, of Trout Lake, has been steadily working on his property, the *Free Coinage*, which adjoins the *Silver Cup*. Improvements were made to the trail, over which rails and other supplies were taken in.

Mrs. Jowett, of Trout Lake, who for many years has been interested in a number of properties and has been responsible for a considerable amount of prospecting and development work, made her annual trip of inspection.

Magnet.* This property consists of the *Magnet* and *Maybe* claims, owned by A. McLean, T. West, B. Hicks, and R. and J. Thompson. It is situated on Mobbs (Canyon) creek, 1¾ miles by trail from Gerrard, at an elevation of about 2,700 feet at the tunnel a few hundred feet above Trout lake. The property is situated in the "South-west Mineral Belt," the formation consisting of alternating bands of limestone, schists, and slates.

The ore, a mixture of galena, zinc-blende, and pyrite, with occasional grey copper, in a calcareous and siliceous gangue, in apparently found in stringers and lenses in a wide shattered zone in graphitic schist. The mineralized strata strike north-westerly up the steep mountain-side, dipping steeply to the north-east.

Just above the creek-level an old tunnel, driven along the strike of the ore-bearing ground, was caved at about 100 feet in from the portal, and a winze beyond the caving, from which 9 tons of ore are reported to have been extracted and shipped some years ago, could not be reached. A short distance inside the portal a short crosscut driven north-easterly contains a winze, full of water when examined, from which some ore is also reported to have been extracted. The following samples were taken:—

Description.	Gold.	Silver.	Copper.	Lead.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.	Per Cent.
Streak in floor of tunnel 100 feet in	0.21	12.9	1.00	9.7	14.5
From small pile of ore on dump of tunnel	0.21	18.8	1.11	19.9	13.7

Some old surface cuts above the tunnel were caved. The work done during the season by McLean and associates consisted in cleaning out and timbering the workings preparatory to continuing development.

The inaccessible condition of part of the workings prevented a satisfactory examination being made and but little information could be gained as to the character and continuity of the deposits. The area offers interesting prospecting possibilities.

Butte.—This group, situated in Bonanza basin and formerly owned by the late J. G. Jenkins, has been bought by R. H. Graves from the Official Administrator at Kaslo. A company will probably be formed to work the property.

NELSON MINING DIVISION.*

The mining activities of this Division have been more pronounced since the recent entry into the field of strong mining companies, including the Victoria Syndicate and Porcupine Goldfields Development and Finance Company, both of which represent British capital. The activities of these companies in the Sheep Creek, Pend d'Oreille, and Ymir camps have been of considerable benefit and have put new life into those areas. Many examinations were made on behalf of these and other companies, and as a result prospecting activity was considerably stimulated, many claims being staked in the vicinity of the active mining properties.

Mining properties and prospects on which work was done include the *Yankee Girl*, *Goodenough*, *Hunter V.*, *Golden Crown*, *Howard*, and *Porcupine* in the Ymir district; *H.B.*, *Black Jack*, *Lucky Boy*, *Emerald*, *Queen*, and *Salmo-Consolidated* in the Sheep Creek camp; McDonald-Reeves properties and *Red Bird* in the Pend d'Oreille section; molybdenite claims on Lost creek; Beaver Creek mines near Ross Siding; *Arnold* on Erie creek; *Golden Age*, *Euphrates*, *Gold King*, and *Fern* south of Nelson; *Silver Reef*, *Queen Victoria*, *Alma M.*, *Granite-Poorman*, Rover Creek placers, and *Paradise* near Nelson; *Molly Gibson* on Kokanee creek; *Bluebird* at Deer Park; and the Associated Mining and Milling Company's properties near Ginol's Landing. The most important activities centred around Ymir, Sheep Creek, and the Pend d'Oreille River areas.

At and near Ymir the principal features were: Resumption of work at the *Yankee Girl* mine, after about six years' inactivity, by O. C. Thompson, W. T. McDowell, and associates; the development of the *Goodenough* on Wildhorse creek by the Porcupine Goldfields Development and Finance Company, Limited; the exploratory work done by the Consolidated Mining and Smelting Company on the *Hunter V.*, tributary to Porcupine creek; the development of the *Howard* property on Porcupine creek by Portland capital, the results of which are reported to be very encouraging.

In the Sheep Creek and Pend d'Oreille River areas the most important development-work was that done by the Victoria Syndicate at the *H.B.* and McDonald-Reeves properties, to both of which further reference is made in the body of the report.

On the North fork of the Salmon river (Erie creek) diamond-drilling was done by the Consolidated Mining and Smelting Company on the *Arnold* group.

Near Ross Siding on the Great Northern Railway development-work was done on the property of the Beaver Creek Mines Syndicate. The camp buildings are reported to have been destroyed by forest fires, which interfered considerably with small mining operations along the railway south of Nelson.

Near Nelson the gold-placer possibilities of Rover creek have recently attracted some attention and two local syndicates were formed to test the ground. Work done by them in the fall was of a preliminary nature.

On the outskirts of the city of Nelson the *Silver Reef* was operated for a short time by R. K. Waite, and subsequently, towards the end of the year, the property was bonded by H. E. Morgan.

The Apex Mining Company, Limited (N.P.L.), was incorporated late in the year to acquire and operate the *Mint*, *Golden Way*, *Apex*, and *Gold Cap* claims, owned by R. K. Waite. The claims, which had been successively staked and restaked for many years by various people, were seized by the Sheriff at Nelson on December 31st to satisfy a judgment against Waite in

favour of G. E. Sanderson, of Portland, in connection with litigation over the *Porcupine* property, another of Waite's promotions.

South of Nelson the Terzian Bros. made interesting discoveries of ore containing free gold associated with iron, lead, and zinc sulphides. The property, known as the *Euphrates*, is described in the body of the report. On Hall creek south of Nelson a small amount of work was done by O. Groh and O. Staples on the *Gold King* and *Fern* properties.

Towards the end of the year Geo. Matthews and associates started to open up the *Alma N.* gold property above the *Eureka*, west of Nelson, with a view to starting development in the spring of 1927. At the *Granite-Poorman* mine in the same locality E. B. Sullivan shipped a small tonnage of gold-copper concentrates.

Near Beasley K. Scheer and associates shipped a car-load of sorted copper ore from the *Queen Victoria*, on which they had a lease.

On Kookanee creek the *Molly Gibson*, owned by the Consolidated Mining and Smelting Company, was operated under lease by A. Molander and associates.

On Cultus creek the *Iva Fern*, chiefly owned by J. W. Mulholland, who discovered the property, was bonded by him late in the fall to A. E. Place, of Los Angeles. An initial payment was made and development-work is due to start in the spring of 1927.

On the South fork of Canyon creek the Laib Bros. were busy in connection with improving the trail to their *Spokane* property.

Near Ginol's Landing on Kootenay lake a number of reverted Crown-granted claims were acquired by the recently incorporated Associated Mining and Milling Company, of Trail, and a large number of claims were staked for the company on adjoining ground. Further reference to this company's properties is made in the body of the report.

Near Kitchener a small amount of work was done on the *Leadville* property. At Creston the *Alice* mine has been worked in a small way by G. Constable. During the early part of the year some development-work was done on the *Alice* by the Porcupine Goldfields Development and Finance Company, Limited. At Deer Park the *Bluebird* property was worked in a small way by G. Briggeman and P. Knabe.

Ymir District.

Yankee Girl.* The reopening of this mine by a private company called the Yankee Girl, Limited, formed by O. C. Thompson and associates, has been an important addition to mining activity in the Nelson Division. The mine, which overlooks the town of Ymir on the eastern side of the Salmon River valley, has been shut down since the year 1920. An aerial tram connects the workings with ore-bins at the railway-tracks. W. G. Norrie, in charge at the mine, reports that new development has been done which has proved a considerable tonnage of ore and indicates possibilities of further important tonnage justifying operations on a much larger scale.

The property has been shipping steadily to the Trail smelter since March. At first the ore, consisting of auriferous pyrite accompanied by galena and zinc-blende in a siliceous gangue, was shipped in bulk for direct smelting as its high silica content made it desirable for fluxing purposes. Later, however, because of the great advances made in the milling practice at Trail, it has been found that excellent recoveries of all the metals can be made by selective flotation, resulting in a better net value than was originally figured on. The average grade of the "run of mine," aggregating some 7,000 tons, was: Gold, 0.44 oz. to the ton; silver, 3.38 oz. to the ton; lead, 3.07 per cent.; zinc, 4.95 per cent. The remainder of the ore shipped was the clean-up of the dumps, amounting to some 11,000 tons of slightly lower-grade material.

The work done during 1926 has disclosed that the ore occurs in a wide shear-zone at points where the fissure-vein traverses granitic tongues. The width of the ore-shoots varies from 6 feet up to 20 feet and the ore has been found to a depth of 1,235 feet below the surface, showing some increase in width as depth is attained with no diminution in values. A new power plant has been installed consisting of a 600-cubic-foot capacity Ingersoll-Rand compressor driven by a water-wheel designed and built by the Nelson Iron Works. The property was completely re-equipped.

Goodenough.* This property, on Wildhorse creek, adjoining the *Ymir* mine on the south-west, was worked under lease and bond during part of the year by the Porcupine Goldfields Development and Finance Company, Limited, which shipped a few hundred tons of ore taken out in development. Towards the end of the year work was dis-

continued by the company and O. D. Frith secured an option on it with a view to interesting capital to continue development. The ore consists of pyrite, zinc-blende, and galena in a quartz gangue, the principal values being in gold.

Dewey.* This property, consisting of the *Dewey*, *Tyne*, *Burch*, and *Dempsey* claims, is situated on the northern side of Porcupine creek, about a mile from the Great Northern Railway. About half a mile of rough-graded road connects the lower tunnel, at an elevation of about 2,675 feet, with the Porcupine Creek wagon-road, a few hundred feet below. The claims are owned by the Chloride Mining and Milling Company, Inc., of Waverley, Wash. The company has done a small amount of work on the property during the last two years.

The formation is composed of metamorphosed sedimentaries of the Pend d'Oreille group near the contact with the Nelson granite, which lies a short distance to the east. The strike of the rocks is north-easterly, with steep dip to the north-west. The ore, consisting of disseminated sulphides of iron, lead, and zinc with occasional copper sulphides, occurs in a silicified band of altered limestone. In the workings examined the width of the mineralization is from 3 to 4 feet.

The lower tunnel, in about 214 feet, is a crosscut which strikes the vein near the face. Here a sample across 4 feet assayed: Gold, 0.02 oz. to the ton; silver, 3 oz. to the ton; lead, 5.4 per cent.; zinc, 2.6 per cent. A sample from a small pile of sorted ore from the lower tunnel assayed: Gold, 1.12 oz. to the ton; silver, 8.3 oz. to the ton; lead, 13.8 per cent.; zinc, 3.5 per cent. The vein is reported to have been traced some distance farther up the mountain-side with open-cuts and short tunnels.

Porcupine.* This group, comprising seven claims owned by E. Haukendahl, E. Guille, and Nels Peterson, is situated on the southern side of Porcupine creek, about 1½ miles by road from the railway. The *Porcupine* claim, which is the oldest claim in the immediate district and the one the creek is named after, was staked in 1895 and most of the old superficial workings date back to 1897.

The property, which is referred to in the Annual Report for 1925, was bonded early in the year by R. K. Waite, who subsequently interested J. E. Riley, representing capital in Cleveland, Ohio. The ore, consisting of low-grade disseminations of galena, zinc-blende, and pyrite in a siliceous gangue, occurs in a zone of contact between Pend d'Oreille schists and Nelson granite. Camp buildings were erected and development-work was done during the spring and summer months. A 1-drill Worthington compressor and 25-horse-power oil-fuel engine were installed. Work was discontinued in the fall.

Howard.* This property consists of the *Howard*, *Paddy*, *Glencoe*, *Lochiel*, *Prince Charlie*, and *Contact* claims and is situated on the eastern slope of the valley of the South fork of Porcupine creek, about 6 miles by road from the Great Northern Railway. A trail, about three-quarters of a mile in length, connects the lower workings with the head of the road. The claims, owned by D. A. and Mrs. Cameron, were bonded during the summer by J. H. Pomeroy, of Portland. An initial payment was made and development-work was done under the management of J. W. Peck, some eight men being employed.

In 1902 about 1,000 feet of development-work was done on the *Howard*, then known as the *Union Jack* group, by the Active Gold Mining Company of British Columbia, promoted in Cincinnati. Towards the end of this company's operations, which were of brief duration, Durkee electric drills were installed, in connection with which the company put in a small power plant at the creek-level some 2,000 feet (estimated) below the workings, which are a little over 6,000 feet above sea-level. Subsequently the mine was closed down and the plant dismantled, since when the property remained idle until taken over by the present operators.

Preliminary work done includes erection of new camp buildings at the mine, repairing and construction of trails, and the installation at the head of the road of a Sullivan gas-engine and portable 250-foot compressor supplying air to the mine through 3,000 feet of 2-inch pipe. A new building was also erected at the compressor camp.

The formation consists of metamorphosed sedimentaries, including quartzites, siliceous and calcareous schists, intruded by granitic stocks and sills of the Nelson batholith. The strike of the sedimentary rocks, which is northerly, with steep dips to the east, conforms roughly to the trend of the border of the main granite-mass. In the marginal zone and in the granite there

are several veins developed by the old workings. On the *Prince Charlie* claim the old workings develop two well-defined quartz veins in granite, the mineralization consisting of pyrite carrying gold values.

On the most northerly vein a 45-foot shaft containing a short drift, both full of water when visited, develop a quartz vein, 30 inches wide at the surface, but widening below the collar of the shaft, striking about N. 40° E. and dipping 70° to the north-west. Work on this vein was apparently discontinued when it was cut off by a small mica lamprophyre dyke in the drift. The same dyke is exposed on the surface, showing the vein to continue beyond it. Several hundred feet southerly an old tunnel has been driven some 325 feet on another quartz vein in granite, 1 to 3 feet wide. This vein strikes about N. 25° E. and dips steeply to the south-east.

No new work has been done on these quartz veins, the deposits on the *Howard* claim, hereinafter described, being considered the most important. On the *Howard* claim, south-easterly from the *Prince Charlie*, open-cuts have been made on what appear to be two parallel veins, some 30 feet apart, striking north-easterly up the steep hillside. The country-rocks are quartzites and siliceous limestone of a dark colour, thick-bedded, and very hard.

On the south-easterly vein an open-cut showed 5 feet of crushed country-rock, quartz and calcite, mineralized with "nuggets" of galena and carbonates. This vein apparently dips to the south-east about 65°. A sample of the sorted sulphide ore assayed: Gold, 0.12 oz. to the ton; silver, 31.6 oz. to the ton; lead, 60.7 per cent.; zinc, 1.2 per cent.; and a sample of the carbonates assayed: Gold, 0.12 oz. to the ton; silver, 14.7 oz. to the ton; lead, 30.1 per cent.; zinc, 0.9 per cent.

On the "main" vein, lying parallel to and about 30 feet from the first vein, the surface workings examined consisted of an old 17-foot shaft (caved), an open-cut, and two trenches. In the open-cut there was exposed a width of 6 feet of sparsely disseminated pyrite, galena, and zinc-blende in a siliceous gangue. The trenches show up to 16 feet of schist containing bands of quartz. The dip of this vein varies from the vertical to 80° to the north-west. The upper tunnel, some 80 or 90 feet vertically below the open-cut on the first-mentioned vein, was driven 325 feet in an easterly direction. This tunnel does not follow any definite vein and apparently lies between the two veins exposed on the surface. Some indefinite mineralization was encountered at two points in this tunnel, 60 feet in and 170 feet in respectively.

The lower tunnel, 90 or 100 feet vertically below the upper one, was driven some 256 feet in an easterly direction, but the results were also indefinite. About 72 feet inside the portal a quartz vein 5 to 9 feet wide and standing about vertical was drifted on for a short distance to the south. In the quartz disseminated galena, zinc-blende, and pyrite occur in bands. The main tunnel only develops a short segment of this vein and then turns away into barren rocks, leaving the quartz in the north wall.

All the above work, which gave such indefinite results, was done by the old company and describes the situation when the property was taken over by J. H. Pomeroy and visited by the writer. The position was that there was some good ore on the surface, but that results underground were unsatisfactory. Since then the work done, according to reliable authority, has been very encouraging and is briefly as follows:—

The first work done by J. W. Peck consisted in driving a tunnel northerly at a point about 170 feet inside the portal of the upper tunnel, where the strongest indications of mineralization were encountered in the old working. Ore was struck almost immediately and followed for a length of some 225 feet through altered sedimentaries to the granite. Here some displacement occurred, but the ore was picked up and followed in the granite. The mineralization, concentrated over a width of about 6 feet in the sedimentaries and 2½ feet in the granite, consists of disseminated galena and sphalerite, with a little pyrite and possibly pyrrhotite. Good milling values are, it is understood, claimed for the whole tunnel. It is not known exactly what relation this ore has to the surface showings, but it is assumed that in the first few rounds the tunnel crosscuts the main vein and thereafter follows a cross-fracture.

In the lower tunnel, at a point about 20 feet back from the face, Peck drove a tunnel northerly, which encountered and followed ore containing good values in gold, silver, lead, and zinc, the gold values in this ore being appreciably higher than met with in any of the other showings. This mineralization apparently also follows a cross-fracture striking in the same

direction as the ore encountered in the new tunnel on the level above. Development, it is understood, will be continued along the cross-fractures and raises will be put up on the ore to prove the relations of the various showings.

Sheep Creek Camp and South of Salmo.

H.B.* At the *H.B.* mine in the Sheep Creek camp development was continued by the Victoria Syndicate throughout the year, Harold Lakes being in charge. Camp buildings were enlarged and improved and over 3,000 feet of crosscutting and drifting was done with a view to proving the downward extension of the zinc ore-bodies mined in the upper levels. The crosscut, about 1,100 feet in length, was driven at a depth of 300 feet below the No. 2 or main level of the old workings. The remainder of the new underground work consisted of drifting northerly and southerly in the ore-zone.

Aspen.* The *Aspen* group, situated on Deer creek, 2 miles above the *H.B.*, was under option to R. J. White, of Wallace, Idaho, when the district was visited early in the year. There are six Crown-granted claims in the group, owned by P. F. Horton, Mrs. Vellacott, E. W. Rawson, and Crease & Crease. Reference to the *Aspen* is made in the Annual Reports for 1915 and 1917. The principal values are in silver. A small amount of work done in 1920 by Horton & Rawson and exploratory work done by Horton during 1926 indicate interesting prospecting possibilities in the area.

Black Jack.* This group, consisting of the *Legal Tender* (Crown-granted), *Black Jack No. 1*, *Black Jack No. 2*, and *Black Jack No. 1 Fraction*, is situated on the western side of Deer creek, near its intersection with Sheep creek, and due south of the *H.B.* property. An option on the claims was acquired by P. F. Horton, original locator of the *H.B.*, and G. L. Peters. Subsequently Los Angeles capital was interested and late in the year some development was done on the *Legal Tender* claim by R. J. White, consisting of a series of long trenches at horizontal intervals of 100 feet.

The property is in the "lime-belt," which is a limestone formation (Pend d'Oreille group) extending almost continuously from the *Emerald* to the *Aspen*. The deposits are of replacement type, the mineralization consisting chiefly of zinc-blende and pyrite, with small amounts of associated galena in places.

At the time of this examination, which preceded the trenching-work done by R. J. White, there were numerous showings of zinc ore exposed in superficial surface workings, the width of the mineralization varying from 4 to 12 feet. The trend of the ore-bodies is northerly up the hill and the dip is from 45° to the west to nearly vertical. A sample was taken across a width of 12 feet in a trench at the upper end of the property, which assayed: Gold, 0.04 oz. to the ton; silver, 6.4 oz. to the ton; lead, 0.8 per cent.; zinc, 9.6 per cent. Higher zinc values could have been obtained, however, over a slightly narrower width. The deposits, which occur throughout a vertical range of 600 feet, are very favourably situated as regards transportation, cheap mining, and development.

Lucky Boy.* This property, consisting of two claims adjoining the *Black Jack* group on the south side of Sheep creek, is included in the deal with R. J. White. The formation, character, and occurrence of the ore are generally much the same as on the *Black Jack*. In places small amounts of molybdenite are associated with the zinc-blende, pyrite, and galena. A few hundred feet above the creek-level a short tunnel crosscuts a wide mineralized zone in silicified limestone containing bands of ore of milling grade from mere streaks up to 6 feet in width. The trend of the deposits is north and south as on the *Black Jack*. A small amount of development-work was done in the fall of 1926.

Emerald.* At the *Emerald* exploratory work was done during the early part of the year, followed by some diamond-drilling. Subsequently work was temporarily suspended. The property has a good record of productive activity extending over a period of years; it is described in previous Annual Reports.

Wolf Lake.* This group, consisting of the *Wolf Lake*, *Hidden Gold*, and *Gold Park* claims, owned by B. M. Wilson, is situated on the eastern slope of the valley at the head of Wolf creek. The formation in the vicinity of the workings is composed of highly siliceous sedimentary rocks and quartzites striking northerly, with steep dips

to the east. At an elevation of about 6,225 feet a tunnel, between 500 and 600 feet in length, follows a quartz-porphyry dyke, 18 feet wide in places, which cuts the formation in an easterly and westerly direction. Some scattered mineralization, consisting of iron and copper sulphides carrying gold and silver values, occurs in and associated with quartz stringers in and along the dyke.

The character of the mineralization was too indefinite to sample in the limited time available, but the following samples give the results obtained from selected material:—

Description.	Gold.	Silver.	Copper.
	Oz.	Oz.	Per Cent.
Copper-stained pyritic ore	0.11	1.8	20.37
Massive pyrite with small amount of quartz	0.37	0.8	1.79

In addition to the tunnel there are several open-cuts in which similar material is exposed. All the work was done unaided by the owner, who, dispensing with car and tracks, used a wheelbarrow in driving the comparatively long tunnel. For many years he has spent every summer prospecting the area.

Vancouver.* The *Vancouver* property, consisting of the *Vancouver*, *Victoria Fraction*, and *Marie Fraction* claims, is situated on the eastern side of Wolf creek, about 1 mile by trail from the *Queen* mine camp, which is 10 miles by road from Salmo, on the Great Northern Railway. The property comprises 9.37 acres in the Sheep Creek gold camp, adjoining the *Queen* and the *Kootenay Belle*.

The *Vancouver* veins have the characteristic north-easterly strike and south-easterly dip of the gold-quartz veins of the camp and occur in the same geological formation, consisting of quartzites, slates, and schists. The general strike of the rocks is about N. 12° E., with steep dips to the east. The veins are fissure-veins angling across the formation in a north-easterly direction and dipping steeply to the south-east. The ore consists of free gold and iron sulphides carrying gold in a quartz gangue.

Of the three known veins on the property, the *Vancouver* vein is the only one which has had any development done on it, and this work can only be considered as superficial since the depth attained below the surface is only about 120 feet (to the bottom of the winze below the lower tunnel-level). This vein, from 18 inches to 3 feet in width, is well defined and has been traced along the surface for several hundred feet. The workings on this vein consist of two drift-tunnels spaced about 50 feet vertically apart on the steep hillside, a raise connecting the lower and upper tunnels and the upper tunnel and the surface, and a winze sunk about 50 feet from the lower tunnel. From these workings a small amount of stoping was done at different periods between 1909 and 1916, when 208½ tons of high-grade sorted ore was shipped to the Trail smelter. This ore averaged about 4 oz. in gold and 1½ oz. silver to the ton.

The lower tunnel, at an elevation of about 4,100 feet above sea-level, or about 800 feet vertically above Wolf creek, is in about 315 feet. The vein was encountered a short distance in from the portal and drifted on to the face, throughout which distance it is clean cut between quartzite walls. About the centre of the tunnel the ore-shoot was encountered from which the high-grade shipments were made. A small amount of stoping was done for a length of some 70 feet and a raise following the ore was put through to the upper tunnel, 50 feet above (estimated). Below the stope a winze, inaccessible on account of the ladder-way being in bad condition, but said to be down 50 feet, was sunk, presumably in good ore, as a small amount of underhand stoping was done and subsequently a new tunnel was started farther down the hill to mine the ore in the winze from below. This tunnel, reported to have been driven by the Dempster Bros. in 1916, is a crosscut which has not been driven far enough to reach the vein, which should be, however, only a short distance ahead. The upper tunnel, which develops the vein for a length of 150 feet (by scale from plan), was not examined because of its unsafe condition. A small amount of stoping was apparently done off the raise connecting the upper tunnel and the surface.

The following samples were taken to get an idea of the value of the ore remaining in the workings and on the dump which was not considered high enough grade to ship, but which might constitute milling-ore:—

Description.	Gold.	Silver.
	Oz.	Oz.
Lower tunnel, 5-inch pay-streak on foot-wall of vein in face of stope just west of raise and about 15 feet above floor of tunnel (this is similar material to the high grade previously shipped)	10.36	1.6
Lower tunnel, across 18 inches (including foot-wall pay-streak) on west side of raise	8.72	1.3
Lower tunnel, across 18 inches of ore at western end of stope just above level	1.06	0.4
Lower tunnel, across 2½ feet of ore in floor of level below easterly end of stope	1.56	0.4
Upper tunnel, across 18 inches of ore at portal	0.28	0.3
Selected ore from dump of lower tunnel	3.41	0.7

There is a small tonnage of ore of milling grade left in the workings and on the dumps.

Future possibilities of the property would appear to depend mainly in the development of the *Vancouver* ore-shoot (which is very small down to the lower tunnel level) at depth, together with the results obtained by developing the other two veins of the property mentioned below. The *Queen* mine, which was extensively developed, might be accepted as a guarantee of the probable continuity with depth of the other veins of the camp and the continuity of the uniformity of the values with the depth attained. The face of the lower tunnel is about 110 feet short of the eastern boundary of the *Vancouver* property and the schist-belt is believed to be a short distance ahead, so that possibilities for another ore-shoot of appreciable length in that direction are limited.

There are two other known veins on the property on which scarcely any work has been done. One of these, a 6-foot quartz vein with the characteristic strike and dip of the veins of the camp, was recently discovered by J. C. Hansen about 150 yards back along the trail from the portal of the lower tunnel. It is apparently on the *Victoria Fraction* ground, near the boundary of the *Hide Away* claim of the *Queen* property. The country-rock is also quartzite. A sample across 3½ feet on the hanging-wall side of this vein gave an assay of 0.14 oz. in gold to the ton. There should be possibilities for an ore-shoot by trenching along the outcrop of this vein, which strikes in the general direction of the *Kootenay Belle* workings farther up the mountain.

The third and smallest vein lying between the last-described vein and the *Vancouver* vein was not examined on account of snow on the shallow outcrop workings, but it is understood to have the same strike and dip and it cuts the same quartzite-band. This examination was made as a result of a request for a report made to the Department by the Official Administrator at Nelson. Subsequently the property was bonded by W. E. Herbert, of Chicago.

Queen.* W. W. Philbrick and associates, of Spokane, operated the *Queen* mine under lease and bond over a period of a few months. Some of the old dumps were run through the mill while arrangements were being made for development, which, however, never materialized.

Salmo-Consolidated.* This property, consisting of the *Sitting Bull, Yellowjack, Blue Jack, White Cloud, Yellowjack Fraction,* and *Blue Jack Fraction* Crown-granted claims, is situated on the eastern side of Cariboo (or Elk) creek, which is a tributary of Sheep creek from the north. A trail about 2 miles in length connects with the Sheep Creek wagon-road at a point 7½ miles from Salmo. The claims were acquired early in the year by P. F. Horton, of Nelson, and associates, of Los Angeles (A. E. Place, W. W. Hartman, R. R. Ball, Jr., and G. A. Hartman).

The formation is composed of siliceous and calcareous members of the Pend d'Oreille schists intruded by granite stocks and sills of the Nelson batholith. In these rocks, which strike north-easterly, with dips from 35° to 50° to the south-east, and conforming to their stratification, there is a series of veins carrying gold values associated with iron, lead, and zinc sulphides in a siliceous and calcareous gangue.

The lowest working, at an elevation of about 5,000 feet (estimated), is an old shaft, then nearly full of water, said to have been sunk 152 feet. The vein developed by the shaft follows a contact between schist and granite, the latter forming the foot-wall. At the top of the shaft the vein, from 12 to 18 inches wide, contains galena and zinc-blende in a siliceous and calcareous gangue. A sample across 12 inches assayed: Gold, 0.06 oz. to the ton; silver, 5.2 oz. to the ton; lead, 10.1 per cent.; zinc, 5.1 per cent.

When the property was last visited, P. Horton had driven a tunnel 40 feet north-easterly on the vein, which widened out to 4 feet in that distance, the face of the tunnel being mineralized with disseminated pyrite, galena, and zinc-blende. Sparsely disseminated mineralization also occurred in the country-rock on the foot-wall. A sample of the dump of material derived from driving this tunnel assayed: Gold, 0.06 oz. to the ton; silver, 1.9 oz. to the ton; lead, 4.8 per cent.; zinc, 6.6 per cent. A sample from the dump of material sorted out from the above assayed: Gold, 0.12 oz. to the ton; silver, 9.2 oz. to the ton; lead, 20.6 per cent.; zinc, 3.9 per cent.

Between the shaft and the summit of the ridge shallow workings and outcroppings indicate a series of similar veins containing disseminated sulphides in a siliceous gangue. A few men were employed during part of the summer and a temporary camp of tents was established. Mining by hand having been found unsatisfactory, work was discontinued with a view to installing a compressor and Diesel engine during the coming season, when arrangements will be made for further development and erection of necessary camp buildings.

Mortgage Lifter.* This property, consisting of the *Mortgage Lifter*, *Tenderfoot*, *Valley View*, *Wild Rose*, *Lone Pine*, *Marble Bluff*, and *Blue Ridge* claims, owned by B. Feeney, is situated on the eastern slope of the valley of the Salmon river, about 8½ miles south of Salmo. The Nelson–Spokane highway is within a quarter of a mile of the property. The formation in which the deposits occur consists of limestone strata of the Pend d'Oreille group striking northerly, roughly parallel to the valley and dipping easterly into the hill. A considerable area of granite lies a short distance to the west.

Some shallow trenches and open-cuts, from 200 to 500 feet above the valley, trace the outcrop of the mineralized strata along the steep side-hill at intervals through the *Mortgage Lifter* and *Tenderfoot* claims. The mineralization, associated with siliceous phases in the limestone, is of an indefinite character, consisting of irregular disseminations of grey copper, pyrite, occasional native silver, and in places molybdenite. Most of the ore shows slight copper-stains and some of it is coated with molybdic oxide. The following samples give an idea of the values:—

Description.	Gold.	Silver.	Copper.
	Oz.	Oz.	Per Cent.
Sorted ore from lowest cut on Mortgage Lifter claim	0.02	68.9	0.74
Sorted ore from most southerly cut on Tenderfoot claim	0.01	27.4	0.23
Broken ore from cut going north along outcrop on Tenderfoot claim	0.04	64.8	0.29
Float from near northerly end of Tenderfoot claim	0.01	31.3	0.21

The property, on which the amount of work done is very small, offers interesting prospecting possibilities.

Molybdenite.* On Lost creek the Consolidated Mining and Smelting Company is reported to have acquired the *Molybdenite* group and a small crew was employed in the fall on preliminary work, establishing camps, etc. The property is described by Galloway in the Annual Report for 1915.

Pend d'Oreille River Section.

McDonald-Reeves.* A considerable amount of work was done during the year by the Victoria Syndicate to further explore the large, low-grade, silver-lead-zinc replacement deposits in the limestone of the Pend d'Oreille River section. Following some 10,000 feet of diamond-drilling, commenced in 1925, a camp was established and tunnelling operations were undertaken. Upwards of 1,200 feet of underground work was done with machine-drills on the Reeves property (*International* group). On the McDonald

property a preliminary camp was established and approximately 600 feet of work was done by hand. Some thirty men were employed at the two properties.

Red Bird.* The *Red Bird* group, situated on the south side of the Pend d'Oreille river, was acquired in 1925 by the Red Bird Mining Company, of Spokane, the property being worked in a small way throughout the greater part of 1926. The property is referred to in the Annual Report for 1924, since when a considerable amount of underground work is reported to have been done. The deposits are in the same mineralized belt as the McDonald-Reeves properties, the values also being in silver, lead, and zinc.

Placer Gold.

A small suction-dredge built by M. Y. Anderson was installed in the sand-bars of the Pend d'Oreille river and after a brief trial period was moved to the Salmon river, about a mile above its confluence with the river. Unfortunately, just prior to the completion of the plant, a sudden burst of high water carried the dredge down to the Pend d'Oreille river, where it was completely smashed and lost.

Near Nelson.

Paradise.* The *Paradise* claim, worked by E. and W. Kline during the early part of the year, is situated between Eagle and Forty-nine creeks, west of Nelson, and is reached by a short piece of road connecting with the upper Granite road. The formation of the area is granite. The workings consist of a tunnel 143 feet long and some trenches which develop a small well-defined quartz vein carrying gold and silver values associated with iron and copper sulphides. Occasional free gold is found.

The vein in the tunnel swells and pinches and in the face, 35 or 40 feet below the surface, is 3½ feet wide. Payable gold values appear to be confined to streaks and stringers, where the sulphides are concentrated. A sample across 6 inches of quartz and sulphides on the hanging-wall side in the face of the tunnel assayed: Gold, 1.12 oz.; silver, 1 oz. to the ton.

Some 40 or 50 tons were put through the *Granite-Poorman* mill, but results, it seems, were disappointing, probably because too much barren material was included and the gold values are chiefly associated with the sulphides. More work is required to prove up the vein, having in view the possibility of widening of the pay-streak.

Work done by the Kline Bros. includes the driving of 66 feet of tunnel with a machine supplied with air from an ingeniously contrived compressor driven by a Chevrolet-car engine. They also built a substantial ore-bin and about a quarter of a mile of rough sleigh-road connecting the ore-bin with the wagon-road.

Euphrates.* This property, consisting of the *Euphrates*, *Rosa*, *Lillian*, *Pasadena*, and *Minto* claims and owned by S. Terzian, E. Terzian, A. Pashgian, and G. Pashgian, is situated on the eastern side of the Salmon river, opposite Golden Age Siding on the Great Northern Railway south of Nelson. The claims were staked following discoveries made during the summer, when prospecting was facilitated by the complete clearing of all brush and timber off the hillside by forest fires.

The rocks of the area surrounding the deposits consist of highly schistose members of the Rossland Volcanic group, which occupy a considerable area south of Nelson. These consist of a series of chlorite-schists in which can be recognized metamorphosed andesite, banded tuffs, and coarse augite porphyrite. Large areas of granodiorite of the Nelson batholith are exposed on the high ground some miles to the east and west. The whole series is intensely schistose, the foliation striking S. 40° E. (up the hill) and dipping 70° to 80° to the south-west.

With the exception of one small fissure-vein cutting the schistosity, the veins or lenses lie parallel to the foliation. The country-rocks in the immediate vicinity of the deposits are bands of chlorite-schist containing intercalated sills of augite porphyrite. A short distance from the river a big trench showed 6 feet of oxidized material containing stringers of quartz mineralized with disseminated pyrite.

A little farther up the hill, and possibly 75 feet above the river-level, a second trench showed a width of 18 inches of qhartz and schist, a sample of which assayed: Gold, 0.44 oz. to the ton; silver, 0.20 oz. to the ton. A selected specimen containing free gold from the same place assayed: Gold, 1.49 oz. to the ton; silver, 1.5 oz. to the ton.

Farther up the hill a third and smaller cut exposed a narrow quartz vein containing considerable galena and zinc-blende, a sample of which assayed: Gold, 0.19 oz. to the ton;

silver, 23.8 oz. to the ton; lead, 10.1 per cent.; zinc, 1.6 per cent. Going up the hill a little superficial digging showed from 3 to 4 feet of siliceous ledge-matter containing sparsely disseminated pyrite and specks of galena.

The fifth open-cut going up the hill is in the bed of a small creek about 1,100 feet vertically above the Salmon river. The showing here consists of a mineralized zone in the schist about 15 feet wide containing bands and lenses of quartz carrying disseminated galena, zinc-blende, and arsenopyrite. The strike of the showing, which conforms to the schistosity of the enclosing rocks, is about S. 40° E. (up the hill) and the dip is 70° to the south-west. A sample across a width of 4½ feet, where the sulphides were concentrated, assayed: Gold, 0.37 oz.; silver, 11.4 oz. to the ton; lead, 4.8 per cent.; zinc, 3.7 per cent. A grab sample from the broken ore on the dump assayed: Gold, 0.27 oz.; silver, 16.1 oz. to the ton; lead, 5.6 per cent.; zinc, 3.5 per cent.

Some 300 yards westerly from the last-mentioned cut and a few hundred feet below it some ground sluicing and stripping has been done, exposing a quartz vein, 6 to 8 inches wide, mineralized with pyrite, chalcopyrite, and free gold. Unlike the other veins of the area, this vein dips to the north-east from 70° to 75°, cutting across the schistosity. A sample of this vein assayed: Gold, 1.83 oz.; silver, 1.2 oz. to the ton; copper, 3.34 per cent.

Since the property was visited further discoveries have been reported, which indicate a series of parallel veins or lenses on the claims. The owners of the *Euphrates* are also reported to have acquired the old *Lost Cabin* property, which lies southerly from the property described and in a similar formation. Brief reference to the *Lost Cabin* is made in Geological Survey Memoir 94, "Ymir Mining Camp." It is understood that capital is available to develop both properties and that a start is to be made early in 1927.

Kootenay Lake.

Chicago.* This property consists of the *Montana*, *Montana Fraction*, and *Bald Mountain* Crown-granted claims, owned by the LaFrance Creek Mining Company, of Chicago, and is situated at the head of LaFrance creek, 9 miles by trail from Kootenay lake. The elevation of the upper tunnel is about 7,800 feet above sea-level, or about 6,000 feet above Kootenay lake. The camp buildings are situated in an open park-like glacial basin a few hundred feet below the workings. Underground work aggregating over 2,000 lineal feet of tunnelling was done by the company in 1900 and following years. The property has not been operated under company management for many years, but work has been done at intervals on behalf of the company by T. Wall, who owns a ranch at the mouth of LaFrance creek.

The rocks of the area, classified as members of the Selkirk series, consist of dark grey, sericitic argillites, siliceous limestones, argillaceous quartzites, and altered greenstones, the latter probably being sheared diabase. The workings develop two veins striking north-westerly, with dips from 70° to 85° to the north-east, the country-rock being a very siliceous, rusty weathering, white limestone which strikes northerly and southerly, with easterly dip. The associated minerals consist of argentiferous galena, zinc-blende, with some chalcopyrite and cupriferous pyrite in siliceous and calcareous gangue.

The underground workings consist of three tunnels. The upper one is 130 feet long with a winze 74 feet deep at 125 feet from the portal. The centre tunnel, some 500 feet in length with two crosscuts, is driven 130 feet vertically below the portal of the upper tunnel. The lower tunnel, about 1,100 feet long with three crosscuts, is about 240 feet vertically below the centre tunnel. (The measurements given above were supplied by T. Wall, who accompanied the writer on his examination.)

Commencing at the top of the hill and going down, the showings are briefly as follows: Just above the upper tunnel an open-cut exposes a width of about 8 feet of disseminated sulphides of lead, zinc, and copper and oxidation products in decomposed ledge-matter. In the upper tunnel, and in the two short crosscuts driven from it, there are streaks of ore in oxidized ledge-matter. The 74-foot winze, said to contain 5 feet of mixed ore at the bottom, could not be examined for lack of a rope. Outside the portal of the upper tunnel there is a big pile of sorted ore, possibly containing from 15 to 20 tons, a grab sample of which assayed: Gold, 0.06 oz. to the ton; silver, 63.4 oz. to the ton; copper, 2.11 per cent.; lead, 39.1 per cent.; zinc, 1.5 per cent. The centre tunnel could not be entered owing to some caving at the portal.

A grab sample from a small pile of sorted ore outside the portal assayed: Gold, 0.05 oz. to the ton; silver, 41.9 oz. to the ton; lead, 28.2 per cent.; zinc, 5.2 per cent. In the lower tunnel the first indications of mineralization were encountered in a crosscut about 200 feet in from the portal. In a short tunnel off this crosscut a sample across 7 feet of silicified limestone assayed: Gold, 0.04 oz.; silver, 0.8 oz. to the ton; lead, 1.1 per cent.; zinc, 2.3 per cent. Continuing along the lower tunnel to about 600 feet in from the portal, narrow bands and streaks of ore are found over a length of about 80 feet. In the face of the tunnel a streak of ore 6 to 8 inches wide, which appears to be widening in the floor of the tunnel, assayed: Gold, 0.06 oz. to the ton; silver, 16.4 oz. to the ton; lead, 38.3 per cent.; zinc, 18.1 per cent.

In addition to the showings mentioned, there are places in the several tunnels where the limestone, oxidized and decomposed over a considerable width, contains sparsely disseminated mineralization, indicating possible starting-points for further exploration with a view to opening up ore-bodies. Mineralization in these siliceous limestones, which can be traced north and south of LaFrance creek for several miles, is widespread, but as yet no large deposits have been opened up, possibly because little or no serious prospecting has been done since the short active period when the discoveries were made and most of the work was done.

Celebration.* The *Celebration* Crown-granted claim, adjoining and south-westerly from the *Chicago* group, is owned by T. Wall. The country-rocks, occurrence, and character of the ore are all very much as on the *Chicago* property. About 1,000 feet south-westerly from the *Chicago* camp some open-cuts show a considerable amount of scattered mineralization in streaks in decomposed limestone. Some of the galena occurs clean in nuggets in the oxidized gangue. Selected galena from streaks in a big pot-hole in the lime assayed for the owner gave from 68 to 82 oz. in silver to the ton and from 71 to 76 per cent. lead.

Snow King.* This property, owned by T. Wall, consists of the *Snow King*, *Snowdrop*, *Snowstorm*, *Assurance*, and *Experiment* Crown-granted claims, situated about 1½ miles westerly from the *Chicago* group, or about 7½ miles from the lake. On the *Snow King* claim, at an elevation of about 6,800 feet, a 90-foot tunnel and two shallow winzes develop a flat-lying vein in limestone, the strike of the strata being northerly up the hill. The width of the vein varies from a seam to 1 foot, containing up to 6 or 8 inches of clean galena in places. The vein is well mineralized through the workings, the ore consisting of galena with small amounts of chalcopyrite and copper carbonates in a calcareous and siliceous gangue. A sample from a small pile of sorted ore outside the portal of the tunnel assayed: Gold, 0.02 oz. to the ton; silver, 55 oz. to the ton; lead, 76.2 per cent.; zinc, 1.8 per cent.

A short distance easterly from the tunnel, and at a slightly higher elevation, another tunnel has been driven some 60 feet in limestone containing stringers and bunches of clean galena with some sparsely disseminated galena. Near the face of the tunnel a winze has been sunk 40 feet, but was inaccessible. Other showings in open-cuts between the tunnels and the summit were not examined for lack of time.

On the *Snowdrop* claim, which adjoins the *Snow King* on the south, an open-cut in limestone shows a stringer of calcite and quartz containing some clean galena. A sample from a small pile of sorted ore assayed: Gold, 0.04 oz. to the ton; silver, 55.6 oz. to the ton; lead, 73.7 per cent.; zinc, 1.8 per cent.

Cultus Creek.* The *Cultus Creek* group consists of the *Morning*, *Evening*, *Old Pick*, *Gad*, *Keno*, *Joe*, and *Bob* claims, owned by the Cultus Creek Syndicate, of Nelson. The property is situated on the southern side of Cultus creek, some 8 miles by trail from Kootenay lake. Cultus creek flows into the western side of the lake at a point some 10 miles north-westerly from Kootenay Landing. Transportation is afforded on Kootenay lake by the Canadian Pacific Railway boats, which call at Cultus Creek Landing when required. The claims extend from Cultus creek, at an elevation of about 3,900 feet, up the mountain-side to the summit of the low ridge separating Cultus creek from Pass creek, at an elevation of about 5,000 feet above sea-level.

The workings, consisting of trenches and open-cuts, develop a mineralized band of altered and silicified limestone of an indicated width of from 40 to 50 feet. The strike of the rocks is N. 20° W. up the hill and the dip is about 55° to the south-west.

The surface of the mountain-side in the vicinity of the workings is covered with a few feet of overburden and few rock-exposures are visible. The formation of the area appears to consist

of highly metamorphosed rocks of sedimentary origin, which, in the vicinity of the vein, have been intruded by basic lamprophyre dykes which may be genetically connected with the ore-deposits. Long shallow trenches dug across the strike of the formation disclose wide zones of oxidized material containing disseminated copper and iron sulphides. All the trenches, extending over a long distance, expose more or less mineralization of similar character.

The following samples were taken at the big cut, where the most work has been done, at an elevation of about 4,750 feet. A grab sample from a big pile of ore assayed: Gold, 0.04 oz. to the ton; silver, 0.09 oz. to the ton; copper, 3.21 per cent. Samples taken in the face of the big cut across 8 and 24 feet, respectively, assayed: Gold, 0.04 oz.; silver, 1.1 oz. to the ton; copper, 1.66 per cent.; and: Gold, 0.06 oz.; silver, 0.7 oz. to the ton; copper, 1.52 per cent.

On the summit of the ridge large boulders of well-mineralized float indicate that higher values in silver and copper may be encountered by trenching across the strike of the vein between the summit and the big cut. A sample of some of this float assayed for the owners gave: Gold, 0.03 oz.; silver, 5.7 oz. to the ton; copper, 5.6 per cent.

Physically the deposit lends itself to economical mining, as drifts can be run in on the vein from the surface of the steep hillside throughout a vertical range of over 1,100 feet. Timber for mining purposes is convenient and plentiful, while water-power could be economically developed on Cultus creek for mining and milling if sufficient ore of economic grade is developed.

Associated Mining and Milling Co., Ltd.*

This company, with registered office in Trail, was incorporated during 1927 to operate mining properties near Ginol's Landing on Kootenay lake. W. Frampton, one of the promoters, is president and field manager and E. Mason is secretary. The following reverted Crown-granted claims have been or are being acquired for the company: *Valparaiso, Martilda, Starter, No. 3, Schmilka,* and *Government.* In addition, some nineteen or twenty claims have been staked for the company on adjoining ground. The claims are divided into several groups, known as the *Gold Rand, Gold Reef, Lake Shore,* and *Mount Royal* groups. As there was snow on the ground when the area was visited in November the examination was limited to the vein traversing the *Government, Valparaiso, Florence,* and *North Rand* claims, on which a considerable amount of work was done by the Valparaiso Gold Mines, Limited, in 1900.

In the Annual Report for 1901 it is recorded that "owing to litigation the properties of the Valparaiso Gold Mining Company and the Imperial Mines, Limited, situated on Goat creek, and upon which large sums of money had been expended, have remained idle since early in the season." Nothing further is recorded concerning these companies, whose former holdings form the nucleus of the present company's property, and in due course the above-mentioned claims reverted to the Crown for non-payment of taxes.

The formation of the area examined is granite. The *Valparaiso-Government* vein is a well-defined quartz-filled fissure striking about N. 20° W. along the contour of the mountain-side in a direction nearly parallel to the eastern shore line of Kootenay lake and from 2,000 to 2,400 feet vertically above it. The vein dips easterly, or into the hill, at about 40° The ore, consisting of quartz mineralized with pyrite and arsenopyrite and occasional specks of galena, carrying gold and silver values, occurs in shoots in the vein. The length of the ore-shoots has not yet been determined. The quartz varies considerably in width, the payable ore apparently being confined to narrow bands in which the sulphides are concentrated.

The old workings, consisting of some short tunnels and numerous open-cuts, trace the outcrop of the vein for a length of several thousand feet. At the southern extremity of the area examined there is a short crosscut tunnel which has not been driven far enough to cut the vein. Near this tunnel there are two open-cuts in which the vein could not clearly be seen for debris. Grab samples of broken ore from the dumps of both cuts assayed: Gold, 0.58 oz. to the ton; silver, 8.6 oz. to the ton; and: Gold, 0.42 oz. to the ton; silver, 16.2 oz. to the ton.

Going northerly along the outcrop and on the *Valparaiso* claim a crosscut has been driven about 230 feet, tapping the vein at a depth of about 125 feet. From the crosscut drifts extend a short distance northerly and southerly on the vein and in the north drift, which was caved at the mouth and inaccessible, a raise connects with the surface and a winze is reported to have been sunk a short distance below the level. The best values were presumably found on the north side of the crosscut. A sample across 2 feet of quartz and oxidized material at the intersection of the vein in the crosscut assayed: Gold, 1.04 oz. to the ton; silver, 4.2 oz. to the ton.

A sample across a 6-inch band of quartz heavily impregnated with iron sulphides on the foot-wall side of the vein in the open-cut just above the tunnel assayed: Gold, 0.24 oz. to the ton; silver, 2.1 oz. to the ton. Another sample across the 3½ feet adjoining the last sample on the hanging-wall side gave: Gold, 0.06 oz. to the ton; silver, 1.4 oz. to the ton.

Some 250 feet vertically below the last-described working a crosscut driven a short distance has not reached the vein. Farther north the outcrop of the vein is traced through the *Florence* and *North Rand* claims by open-cuts and short tunnels. Farther up the mountain, and easterly from the property described, old workings are reported to develop other quartz veins similar in character and mineralization.

Summarizing the situation, it would seem that, when the numerous open-cuts and other workings are cleaned out, a very careful and systematic sampling of the veins is required to determine their gold and silver content and to ascertain if payable values are distributed over sufficient length and width to constitute a commercial proposition. Good assays can evidently be obtained in many places, but whether these assays represent any appreciable tonnage has yet to be determined. The work done during the year was of a preliminary nature, including the cleaning-out of the old workings, repairing cabins and trails.

Copper Canyon.* This property, operated by the Imperial Mines, Limited, in 1900, is situated on Goat (Akokli) creek and was restaked by W. Frampton and associates, of Trail, who are closely connected with the Associated Mining and Milling Company. The group, which consists of the *Copper Canyon*, *Copper Creek*, *Dark Canyon*, *Nakusp*, *Red Rock*, *Copper Hill*, and *Copper Centre* claims, was not visited owing to the lateness of the season. It is reported that the ore consists of copper sulphides in a quartz gangue and that development done by the old company includes two tunnels driven on the vein and several open-cuts.

Country Girl.* This claim, situated on the east side of Kootenay lake, a quarter of a mile south of Columbia point, north of Ginol's Landing, was staked recently by A. N. Gibbs and E. J. Irving, who disposed of interests to L. F. Tyson and T. F. Lean. Subsequently the claim was transferred to W. Frampton, of the Associated Mining and Milling Company. Just above high-water mark there is an old tunnel driven a short distance easterly along a silicified fractured zone in granite. Associated with quartz and penetrating the country-rock in places there is some mineralization consisting of sparsely disseminated pyrite, zinc-blende, and galena.

Just below the then water-level there is reported to be a showing 4 feet wide of quartz containing disseminated galena. A sample from a small pile of ore taken from this showing assayed: Gold, 0.03 oz. to the ton; silver, 2.3 oz. to the ton; lead, 11.2 per cent.; zinc, 0.8 per cent. A short distance southerly along the lake-shore open-cuts expose a quartz vein striking northerly, 18 to 24 inches wide, mineralized with irregular disseminations of galena.

Iolanthe.* This claim, situated on the east side of Kootenay lake, about a quarter of a mile northerly from Sanca creek, was staked recently by A. N. Gibbs and E. J. Irving, who disposed of interests to L. F. Tyson and T. F. Lean. Subsequently the claim was transferred to W. Frampton, of the Associated Mining and Milling Company, The property is situated in a small area of metamorphosed sedimentary rocks surrounded by granite.

Near the lake-shore, where two shallow shafts have been sunk and some trenching has been done, the rocks are quartzose mica-schist, talc-schist, and quartzite. These rocks strike south-easterly, climbing the hillside diagonally, and dip to the east into the hill. Lying parallel to the foliation of the schists are stringers and veinlets of quartz mineralized in places with pyrite, zinc-blende, and galena. A grab sample from a small pile of ore derived from the hanging-wall streak of the "ledge" near the lake-shore, which was the strongest mineralization seen, assayed: Gold, 0.04 oz. to the ton; silver, 5.5 oz. to the ton; lead, 3.4 per cent.; zinc, 16.5 per cent.

Five other claims, known as the *Iolanthe No. 1*, *No. 2*, *No. 3*, *No. 4*, and *No. 5*, staked in the vicinity of the *Iolanthe* by the same interests, were not visited.

List of Shipping-mines in the Nelson Mining Division, 1926.

Mine.	Locality.	Tons.	Character of Ore.
Yankee Girl	Ymir	18,179	Gold-silver-zinc-lead.
Goodenough	Ymir	323	Silver-lead-gold.
Alice	Creston	133	Silver-lead.
Molly Gibson	Kitto	44	Silver-lead.
Queen Victoria	Beasley	29	Copper.
Bluebird	Deer Park	5	Silver-lead.
Granite-Poorman	Taghum	10	Gold-silver-lead.
Queen	Salmo	27	Gold.
Silver Reef	Nelson	4	Silver-lead.
Boulder City	Ymir	7	Gold.
Porcupine	Hall	18	Silver-lead.
Storkey	Nelson	1	Silver-lead.
Total		18,780	

TRAIL CREEK MINING DIVISION.

At the Rossland mines of the Consolidated Mining and Smelting Company about 100 men were steadily employed during the year and a steady though small production was maintained.

Operations at the *I.X.L.* were suspended by the lessees after a considerable amount of exploration-work had been accomplished in an effort to pick up the continuation of the rich gold-quartz vein which had yielded them such handsome returns. The property, which is mentioned in previous Annual Reports, became famous a few years ago for its phenomenally rich gold quartz, some of the ore running as high as 300 oz. in gold to the ton. On the *O.K.*, which adjoins this property to the west, a considerable amount of underground work has been accomplished by a local syndicate in an endeavour to pick up the extension of the *I.X.L.* vein in this direction, but so far without any very encouraging results. On the easterly side, however, work on the *Midnight* claim by another syndicate has resulted in picking up broken segments of the vein, in which some high-grade ore has been encountered. During the year work was confined to driving a low tunnel to tap the downward extension of a small ore-shoot which is exposed in a 30-foot winze from the level above. This property is equipped with an electrically driven compressor, which also supplies air to the *O.K.*, power being supplied by the West Kootenay Power and Light Company.

Further exploratory work was also done at the *Golden Drip*, which adjoins these properties to the south.

Trail Reduction-works.

The Consolidated Mining and Smelting Company eclipsed all previous records at this great plant with a production in gold, silver, copper, lead, and zinc valued at $37,223,235, while additions now being made forecast a still greater production in 1927. The lead production heads the list with 248,800,000 lb. to its credit, followed by zinc with 123,200,000 lb.; silver, 6,846,000 oz.; copper, 21,760,000 lb.; and gold, 1,000,000 oz. The tonnage of ores and concentrates shipped to Trail during 1926 was nearly 600,000 tons.

Of this immense tonnage, the large bulk of silver-lead-zinc concentrates was derived from the *Sullivan* mine, supplemented by a substantial tonnage from various independent shippers of the district, notably those in the Slocan and Ainsworth Divisions. The increase in copper production has been principally due to the receipt of flotation concentrates from the Granby Consolidated Company's mine at Copper mountain. The shipping-list, which includes the names of some sixty-five independent shippers of District No. 5, indicates the widespread activity which has taken place during the year.

Each year witnesses many important additions and alterations to the plant, all made with a view to increasing production, improving recoveries, and reducing the costs of handling material. Among some of the most important innovations the following may be mentioned: Additions to the zinc plant, which were well under way at the end of the year, provide for an increased production of 80 tons a day, making its total capacity 280 tons a day of refined zinc. A 50-ton addition to the lead-refinery has been completed, making the total capacity 400

tons of refined lead a day. The erection of a 30-ton electric furnace was commenced during the latter part of the year. This will be used for the treatment of the residue from the zinc-leaching plant. At the copper plant a reverberatory furnace is being installed to smelt the copper-flotation concentrates from the Allenby mill. A new concrete stack, 409 feet high and 24 feet diameter at the top, has been erected to take care of the fumes from the lead plant, after the same have passed through a new Cottrell treater, similar to that at the zinc plant and described in the 1925 report.

Owing to the increased tonnage of ores received for concentration an addition of a 300-ton unit was added to the concentrator at Trail, making its total capacity 600 tons a day. During 1926 the lead and zinc cleaner-cells were added and a complete testing laboratory was installed at one end of the building. The benefit derived from this plant by independent shippers is reflected in the fact that in 1925, when it was first made available for customs ores, 13,000 tons of ore was concentrated at Trail and in 1926 the tonnage increased to 81,700 tons.

In order to cope with the ever-increasing power requirements the West Kootenay Power and Light Company (a subsidiary) has commenced preparations for the installation of another plant on the Kootenay river below Bonnington which will develop an additional 60,000 horse-power. This will bring the total power-development of this company on the Kootenay river up to 152,000 horse-power.

SLOCAN CITY MINING DIVISION.

Prospecting activities in the Slocan City Division have not been quite as active as usual, while the principal mining operations were carried on at the *Enterprise* on 10-Mile creek. However, it is reported that the B.C. Exploration Company, recently formed, has acquired under the advice of R. C. Campbell Johnston a large number of claims on which extensive exploration and development is planned. Operations of this kind, if successful, would do a great deal towards stimulating interest in this section of the district.

The *Enterprise* mine, which was operated steadily during the year, shipped 605 tons of milling-ore to Trail. During the year improvements were made to facilitate handling the ore at the mine. The No. 5 level was reopened, as was also the No. 4 to a certain extent. Ore was mined from an intermediate between these two levels as well as from the No. 7. E. C. Wragge, of Nelson, and P. McGuire, of Slocan City, control the property, references to which may be seen in previous Annual Reports.

The *Anna* group on Springer creek, which is owned by Kurt Zimmerman, of Slocan City, was acquired under option by Neil Bertrandias and associates, of Portland, who are proceeding with further development. The *L.T.* group on Springer creek was worked by the owner, D. B. O'Neail, of Slocan City. At the *Ottawa*, which is owned by the Consolidated Mining and Smelting Company, 26 tons of silver ore was shipped by lessees.

ARROW LAKES MINING DIVISION.

The outstanding event in this Division during the year was the bonding of the *Big Ledge* group of claims on Pingston creek by American interests on the advice of Colonel Owen James and A. St. Clair Brindle. The property is one of old standing on which not much development has been done. The mineralization exposed in the surface showings consists largely of zinc and iron sulphides, with which is associated a little galena. Late in the fall supplies were packed up and contracts let for a few hundred feet of tunnelling; in addition to this, diamond-drilling was contemplated. For further reference *see* Annual Report for 1923.

Clayburn Company, Ltd.—Kilgard Plant.

Clayburn Company, Ltd.—Clayburn Plant.

WESTERN MINERAL SURVEY DISTRICT (No. 6).

By Wm. M. Brewer, Resident Mining Engineer.

As the following report will be the last one the writer will make as Resident Mining Engineer for the No. 6 District, for the reason that he is retiring from the Government service, he desires to express his appreciation of the universal courtesy and assistance he has received from prospectors, mine owners and operators, visiting mining engineers, the members of the Geological Survey of Canada, the officers of the Chamber of Mines, and, in fact, from every one connected with the mining industry in his district in any capacity whatever.

INTRODUCTORY.

The Western Mineral Survey District (No. 6) includes the Alberni, Clayoquot, Quatsino, Nanaimo, Victoria, Vancouver, and New Westminster Mining Divisions. The boundaries are as follows: The north-east corner is on the Mainland near the intersection of latitude 52° and longitude 125° at the head of the Klinaklini river; from that point the eastern boundary follows an irregular line which is the watershed between the rivers that flow into the Fraser towards the south-east and east and those that flow into the strait of Georgia towards the west and south-west. This line is also the western boundary of the Clinon, Lillooet, and Yale Mining Divisions. The south-east corner of the No. 6 District is on the International boundary at a point a short distance easterly from Chilliwack lake; thence the southern boundary follows the International boundary-line to the coast on the 49th parallel of latitude near the mouth of the Fraser river; thence from that point the southerly boundary follows an imaginary line between the islands off the south-east coast of Vancouver island on the International boundary; thence the westerly boundary is the Pacific ocean in a north-westerly direction to the north end of Vancouver island; thence the boundary crosses from Vancouver island to the entrance of Seymour inlet on the south end of Queen Charlotte sound and follows an irregular line in a north-easterly direction to the head of Klinaklini river, the point of starting.

This district includes all of the islands between the Mainland and Vancouver island as well as all of the islands on the west coast of Vancouver island, and occupies an area roughly figured out as approximately 248 miles from north to south by 213 miles from east to west.

The Nanaimo Mining Division, the largest one in the district, covers approximately one-third of Vancouver island, in addition to a section of the Mainland, and extends inland a distance of about 150 miles, or as far as the headwaters of the Klinaklini, Homathko, Southgate, Toba, and all other streams that flow westerly and south-westerly from the watershed that separates the Pacific ocean from the Fraser river.

The district has the distinction of being the scene of the earliest coal-mining and also metal-mining in the Province. The earliest lode-mining of which there is any record was carried on by the Howe Sound Copper Mining Company, of New Westminster, in 1867, on some mineral claims staked on White Cliff point at the entrance to Howe sound, where there was an occurrence of bornite-copper ore. The first coal-mining on a commercial scale was carried on for a short time at Suquash in 1835, on the north-easterly coast of Vancouver island, and in 1852 at Nanaimo, on the east coast of Vancouver island, where several collieries are still in active operation.

The entire area covered by No. 6 District is very mountainous and for the most part covered by dense forests, in which the prevailing varieties of timber are Douglas fir, hemlock, red cedar, spruce, balsam, alder, and cottonwood.

The coast-lines around Vancouver island and the west coast of the Mainland are extremely irregular owing to the fact that a large number of fiords or inlets penetrate the coast, extending in some cases on the Mainland for a distance of 65 or 70 miles inland, as illustrated by Howe sound, Burrard, Jervis, Toba, Bute, Loughborough, and Knight inlets. These fiords or inlets offer splendid opportunities for prospectors to use launches and small boats to prosecute their occupation, because there are several arms of each one and also many islands with good anchorages especially for launches and small boats. Usually during the summer season the waters in these inlets are quite calm, but the tides have to be studied and understood because of the several narrows where the waters flow at the rate of several knots an hour. During the winter months travelling in small boats or launches is not as comfortable as in summer, yet many prospectors, timber-cruisers, and others can be found all the year round travelling in this manner.

Another advantage that the district has for prospectors is the large number of lakes, especially on Vancouver island, which often form links in a chain; so that it is possible to travel for many miles in a chain of lakes separated by portages of various lengths.

The west coast of Vancouver island is cut up into a series of sounds and bays, which are so located that although the coast-line has the appearance of being very inhospitable, yet it is possible to travel from Victoria, the south end of Vancouver island, to Cape Scott, the north-western point, in sheltered waters except in four stretches; the first being from Port San Juan (Renfrew) to Cape Beale, a distance of about 40 miles; the next from the west entrance of Barkley sound to the entrance of Clayoquot sound, a distance of about 24 miles; the third from Sidney inlet to Nootka sound, a distance of about 32 miles; and the last exposed section, being the longest and usually most stormy, from Esperanza inlet to Cape Scott, a distance of about 100 miles. In this last section sheltered water can be entered in Kyuquot sound, also at Forward inlet, Quatsino sound.

The sheltered waters on the west coast of Vancouver island travelling north-westerly are Sooke harbour, Port Renfrew or San Juan harbour, Barkley sound, with three entrances from the ocean, within which is a group of islands known as the "Thousand islands," and Alberni canal, penetrating about 25 miles into the coast-line. On one side or the other of most of the islands, coves and small bays usually occur where there is fairly good anchorage for launches or small boats. The next sheltered water to Barkley sound is in Ucluelet harbour and inlet; from there open water extends to Clayoquot sound, with its several islands and inland waterways, by which the trip between the entrance to Clayoquot sound and Sidney inlet, a distance of about 25 miles, can be made entirely on inside waterways. The next westerly harbour is Hesquiat, where the shelter for small boats or launches is not good, with a wind from the south, south-east, or south-west. Nootka sound, which is the next sheltered water, furnishes an opportunity to travel via Tasis canal in inside water to Esperanza inlet, a distance of about 35 miles, from which last point a traveller up the west coast is compelled to remain in exposed waters because, although Kyuquot and Quatsino sounds both afford shelter, neither of these have connecting bodies of inside water paralleling the ocean shore-line similar to Nootka and Barkley sounds.

The abundance of several varieties of fish, including clams, oysters, and crabs, as well as grouse and big game, both on the Mainland and Vancouver island, proves a great attraction to prospectors. The saying along the Coast, "When the tide is out the table is spread," refers to the numerous and extensive clam-beds that occur at frequent intervals on the entire coast-line.

From the foregoing it can readily be seen that the opportunities for prospecting, from a central camp established at good anchorage in a sheltered inlet or bay from which the mountain sides and summits can be reached in short distances, offer a great advantage over the usual method of prospecting timbered mountains where long distances have to be travelled inland and supplies packed on men's backs.

The greater part of the district is contiguous to the coast and so possesses a mild and equable climate, with variations of temperature very much modified as compared with the interior mountainous districts. The climatic conditions are such that over a large part of the district prospecting can be carried on for ten months in the year, while field-work can be done practically all the year round. Underground development-work can be carried on the entire year round without cessation.

Another advantage possessed by the No. 6 District is the numerous possibilities to develop water-power, which, according to the estimates by the Commission of Conservation of Canada, show the total horse-power possibilities on Vancouver island to be 270,000 and 162,500 on that section of the Mainland included in the No. 6 District. This estimate does not include the possible power of any stream of less than 1,000 horse-power. Later in this report more details with regard to water-power possibilities, both developed and undeveloped, will be given.

Transportation.

The transportation facilities in the district are good considering the character of the country, which makes it compulsory for the prospector and engineer to travel on foot and pack their own supplies from base camps on the various shore-lines, but to reach these base camps there are several steamers that ply from Vancouver and Victoria on regular schedules that stop at settlements, logging camps, and mining camps situated along the route.

So far as land travel by automobile is concerned, there are only a comparatively few places in the mineral-zones in the district where this way of travel can be taken advantage of. As an illustration, from Victoria to Campbell River, on the east coast of Vancouver island, there is the Island highway, 175 miles long, a branch of which forks off at Parksville on the east coast en route to Port Alberni on the west coast, a distance of about 30 miles.

On the southern Mainland there are automobile-roads as well as the Canadian Pacific, Canadian National, and British Columbia Electric Railways between Vancouver and Ruby Creek, the easterly boundary of the district, also a wagon-road over which an automobile can be driven from Chilliwack, the eastern terminus of the British Columbia Electric Interurban line, to the foot of Chilliwack lake near the International boundary, a distance of about 30 miles.

In the northerly portion of the district on the Mainland, which is also the northerly portion of the Nanaimo Mining Division, the transportation facilities are the Pacific Great Eastern Railway, with automobile-roads from the northern terminus at Williams Lake, westerly across the Fraser river to One Eye lake, near the headwaters of the Klinaklini river. In this section of the district saddle and pack horses can be used by prospectors and engineers on field-work.

On Texada, Lasqueti, and Quadra islands there are several miles of wagon-roads on which automobiles can be used.

Generally speaking, the mineral-deposits in the district so far discovered have been located within a few miles of the shore-line, either along the coast or on the lakes, and as a rule the mountain ranges rise from the water-line with precipitous sides, so that very often elevations from 2,000 to 5,000 feet are reached within a comparatively short distance of the shore, which of course renders any other method of transportation, except on foot, impossible.

Field-work.

During 1926 field-work was started in the Nanaimo Mining Division on Texada island and the Malaspina peninsula, February 6th, and was carried on practically continuously, making examinations of mines, prospective mines, and some newly staked prospects until December 15th.

The following sections in District No. 6 were visited and examinations made during the field-work referred to:—

Alberni Mining Division: West coast of Vancouver island—Barkley Sound section and Uchucklesit harbour.

Clayoquot Mining Division: West coast of Vancouver island—Clayoquot sound, Nootka sound, and Tasis canal.

Quatsino Mining Division: West coast of Vancouver island—Quatsino sound and its arms, also vicinity of Alice lake.

Nanaimo Mining Division: East coast of Vancouver island—Courtenay, Comox, Campbell river, Rock bay, and Humpback bay.

Nanaimo Mining Division: Islands—Lasqueti, Jervis, Texada, Quadra, and Thurlow.

Nanaimo Mining Division: Mainland—Theodosia arm and adjacent mountains, Powell lake, Malaspina peninsula, Phillips and Frederick arms of Cordero channel, and Knight inlet.

Vancouver Mining Division: Mainland—The mountains adjacent to Jervis inlet, Howe sound, Hotham sound, Seechelt inlet, Salmon arm, Pacific Great Eastern Railway section, including upper Squamish, Mamquam, and Brandywine rivers.

New Westminster Mining Division: Mainland—Pitt lake and Chilliwack section.

Victoria Mining Division: Vancouver island—Sooke River section, Leech river, Mounts Sicker and Brenton, Koksilah river, also some other places in the vicinity of Victoria, and Jordan River section.

In the field-work it is impossible to visit every prospect annually; consequently the sections where the most important new work or outstanding discoveries are located were selected. A large proportion of the time occupied in field-work has to be devoted to the examination of prospects in the course of development, the owners of which make application for assistance from the Government, under the provisions of the "Mines Development Act," for either building new trails and roads or reconstructing and repairing old ones.

Resulting from such examinations during 1926, grants of several thousand dollars for such work were made by the Department of Mines. The results from such assistance have been very satisfactory from the standpoint of improving the transportation facilities to such an extent that heavy machinery has been hauled in to some properties by auto-trucks instead of having to be packed in either by horses or by manual labour.

Prospecting.

While the number of prospectors engaged in the district during 1926 has not been large by any means, there have been enough to have located and recorded a considerable number of new mineral claims, some of which show considerable promise and with proper development may result in the opening-up of mines of commercial value.

In looking over the lists of new located mineral claims, it is noticeable that there have not been as many restakings as has been the practice in years gone by, for the records show that on a very large percentage of the un-Crown-granted mineral claims the annual assessment-work has been done more thoroughly and systematically than has been often the case in the past; so that scouting engineers will find better opportunities for examining properties.

Some idea of the work that has been done by the prospectors during 1926 can be gleaned from the fact that there are approximately 1,800 un-Crown-granted mineral claims in good standing in the district up to December 31st, 1926. In addition there are about 2,000 Crown-granted mineral claims.

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Summary of Progress in Metalliferous Mining.

During 1926 metal-mining has shown a marked improvement in District No. 6. The Britannia Mining and Smelting Company has again been the only producer, but this mine made a much larger production than in any previous year.

The notable progress in the industry has been the extensive development-work done on several properties; the chief being on the *Old Sport*, operated by the Coast Copper Company; the *Alice Lake* and *Millington* groups, in Quatsino Division; the *Star of the West* group, Tasis canal, Nootka sound, Clayoquot Division; the *Caledonia* group near Quatse lake, Nanaimo Division; *Revenue* group on Theodosia arm, Nanaimo Division; the *Monte Christo* group, Fanny bay, Phillips arm of Cordero channel, Nanaimo Division; the *Florence*, *John Bull*, and *Royal Arch* groups, Malaspina peninsula, Nanaimo Division, about midway between Powell River and Lund; the *Gem* and *Marjorie* groups, Texada island, Nanaimo Division; the *Lenora* and *Tyee* on Mount Sicker, Victoria Division; the *Golden King*, *Bruce*, *Radiant*, *Brandywine*, *Blue Jack*, *Astra*, *Contact*, and *Lynn Creek Zinc* groups, Vancouver Division; *Silver Chief*, Chilliwack lake, and *Viking* group, Pitt lake, New Westminster Division.

So far as new discoveries are concerned, the most notable have been those reported by a group of prospectors about 10 or 12 miles from the head of Knight inlet in the high mountains bordering the Klinaklini river. Intensive prospecting has been done in the vicinity of Squamish, Vancouver Division; on Ray creek, tributary of the Stawamus river; and in the mountains adjacent to the upper Squamish river; also on Quadra island and along the east coast-line of Vancouver island between Rock and Humpback bays. The mountains on the west side of Howe sound have also been considerably prospected.

Of importance also was the policy of the Consolidated Mining and Smelting Company of Canada, Limited, in keeping scouting engineers in the field during 1926 to examine prospects. The company has bonded some properties and let contracts to the original owners to extend the development-work. The writer is reliably informed that during 1927 this company will operate diamond-drills on some of these prospects.

The Britannia Mining and Smelting Company adopted the same policy during 1925, when that company prospected some mineral claims on Goat creek, Squamish section, by diamond-drilling. The company is also in line to secure good prospects with promising possibilities and engineers from the staff are prepared to examine any such prospects that may be brought to their attention.

The Porcupine Gold Fields Development and Finance Company, Limited, of Ontario, is another of the big mining corporations that has had its engineers in the field. The *Lynn Creek Zinc* group on Lynn creek near North Vancouver was bonded by this company and development-work is being carried on.

Coal-mining.

No mention is made in the following report of the coal-mining industry, because that is fully covered by the Chief Inspector and his staff, whose reports appear in this Annual Report under their proper headings.

Non-metallic Minerals and Building-stone.

In previous Annual Reports the non-metallic minerals, building-stone, crushed rock and gravel, Portland cement, and road-making materials have not received as much attention as they are now entitled to, because of the rapidly growing importance of the industries with which they are connected. Later in this report, therefore, descriptions of the quarries and plants will be found under the heading of the Mining Divisions in which they occur.

The non-metallic minerals in this district include building-stone, gypsum, talc, bauxite (of low grade, used in refining gas), potter's clay, shale (used in making sewer-pipes, paving and pressed brick), common brick-clay, natro-alunite, and limestone (used for the manufacture of sulphite in the pulp and paper mills, also in the copper-smelters for flux, and exported in barrels as hydrated lime).

Building-stone occurs at several points, the varieties being marble, granite, sandstone, and andesite, which are, with the exception of marble, quarried on a commercial scale. The most extensive granite-quarries at present being operated are on Nelson and Granite islands, Jervis inlet, about 60 miles north-westerly from the city of Vancouver. Sandstone of excellent quality for building occurs on Newcastle island, near Nanaimo, where a large quarry has been opened. Andesite tuff, used in the erection of the Parliament Buildings and other important buildings, is quarried on Haddington island, 4 miles west of Alert Bay.

There are several quarries from which crushed rock and gravel are obtained for building and road-making purposes; the most important in the No. 6 District are those on Pitt river, Howe sound, and Burrard inlet, on the Mainland, and on the south-westerly coast of Vancouver island near Esquimalt. No. 6 District contains the only plants in the Province where Portland cement is manufactured. These are in the Victoria Division.

Iron and Steel.

There have been no new developments relative to the iron and steel industry in the No. 6 District during 1926. In fact, so little interest seems to exist at the present time that no application has been received for supplies of iron ore for experimental purposes under the provisions of the "Iron-ore Supply Act."

Labour Conditions.

During 1926 labour conditions have been mutually satisfactory to operators and employees throughout the district. The rule of supply and demand has been permitted to govern to the satisfaction of every one interested and to the advantage of the industry and the men employed.

The bonus system is practised by the Britannia Mining and Smelting Company, by which the regular wages are increased in any department of the mine-workings where a man's work can be measured and a unit of production can be set for which a base wage is paid. Any saving or decrease in cost below the standard cost that has been ascertained by close study is split on a fifty-fifty basis between the company and the employee.

Esquimalt & Nanaimo Railway Company's Land.

In the Annual Report for 1925 the regulations adopted by the company for the administration of the Esquimalt & Nanaimo land-grant, which comprises practically one-third of Vancouver island, were published on pages 267 and 268, and as there have been no alterations since it is not deemed necessary to repeat them in this report.

The area within the boundaries of this land-grant forms a portion of the Victoria, Alberni, and Nanaimo Mining Divisions, and all base metals, coal, and petroleum that occur within the land-grant belong to the railway company, leaving only the precious metals belonging to the Crown.

The territory embraced by the land-grant is open to prospectors for prospecting and staking mineral claims for the precious metals, subject to the regulations laid down by the company, which are published in pamphlet form, which can be obtained on application to Newton J. Ker, Land Agent, Esquimalt & Nanaimo Railway Company, Victoria.

ALBERNI MINING DIVISION.

Progress in lode-mining in Alberni Division during 1926 has been to a great extent disappointing, because on December 31st there were only seventeen un-Crown-granted mineral claims in good standing and none of the numerous Crown-granted claims were being worked. A few new locations were made during the year by some of the old-time prospectors living in the old town of Alberni and at Port Alberni. These men continue to do their annual assessment-work on their un-Crown-granted claims, but have no capital to extend that work to serious development, and while waiting for the opportunity to make a sale many of them become discouraged and abandon the claims, with the result as stated, only seventeen un-Crown-granted claims in good standing in a Mining Division where there were more than a hundred several years ago.

That part of the Alberni Division which is situated within the Esquimalt & Nanaimo land-grant covers about one-fifth of the area included in the Division, and the boundary is marked by a line extending north-west and south-east, crossing the Alberni canal at Dunsmuir point, about 6 miles below Port Alberni, the head of navigation. This line extended north-westerly crosses Great Central lake at a point about 25 miles from the Alberni canal and 5 miles from the foot of the lake.

This Division was the scene of both placer and quartz mining in the early nineties and had two mines shipping copper-sulphide ore to the Tacoma smelter as early as 1899. The ore-bodies, however, proved to be lenticular as the development was advanced, with the result that when the available ore was mined and the apparent termination of the producing lenses was reached, operations were suspended about 1901 and one of the properties, the *J.J.J.*, has never been reopened; the other, known as the *Monitor*, has been operated spasmodically two or three times since. The latest operations were from 1916 to 1918, during which time the property was purchased by Samuel Ryder, of England, who closed the work down in 1918, since when the property has been idle.

Both of these properties are located on the west side of Alberni canal, from about 14 to 18 miles below the port, the main mine-workings of both properties being about half a mile from the shore-line at an elevation of about 1,500 feet.

There have been two examinations made of the geology in the Alberni Division by the staff of the Geological Survey of Canada. The first of these was made by C. H. Clapp during the field seasons of 1908, 1909, and 1910; the second by Victor Dolmage during the field season of 1919. The report on the first of these examinations was published as Memoir No. 13, G.S.C., "Southern Vancouver Island"; the report on the second examination was published in the Summary Report, 1919, C.G.S., Part B. Clapp's report describes the geology of the area south-east from Alberni canal and Dolmage's report includes the coast-line of Barkley sound and westerly shore-line of Alberni canal.

The minerals that have been found in the Alberni Division to date have been copper-sulphide ores, copper-gold-silver ores, some gold-bearing quartz veins, placer gold, magnetite-iron ore, pyrrhotite, one deposit of metallic or native arsenic, and one deposit of mercury.

The placer gold was found on China creek and Franklin river, tributaries of the Alberni canal, which flow into the canal on the easterly side below Port Alberni, the first mentioned about 8 miles down the canal and the last mentioned about 12 miles. These creeks were worked in 1896, 1897, and 1898 by bed-rock sluicing and two hydraulic plants were installed. They were only operated for a short time when the diggings were abandoned as worked out. Until quite recently, however, a few prospectors would not be convinced until they found out by experience, but they are now satisfied as they only succeeded in obtaining a few colours.

The interesting feature in this connection is that near the heads of both of the streams in the Beaufort range of mountains there occurs a well-defined system of quartz veins which carry values in gold, sometimes as high as several ounces to the ton, and about 1898 and 1899 there were several claims staked, recorded, and prospected to some extent. One group, which was known as the *W.W.W.*, was developed into a shipping-mine; the ore from this was sacked, packed on horses about 12 miles miles to the mouth of the Franklin river on the east side of Alberni canal, and shipped to the Tacoma smelter. This ore yielded in the neighbourhood of $75 to the ton in gold, but after operating for about two years work was suspended, and although since then work has been resumed twice, the last time in 1921–22, the property has been idle since then.

One reason why there is no activity in this northern section of the Division along the southerly face of the Beaufort range is that the transportation facilities have not been improved; in fact, they are not as good as they were twenty years ago. At that time there was a good wagon-road from Port Alberni to Mineral hill, a distance of about 15 miles and close to the old Alberni Consolidated property, as well as horse-trails into the section where the *W.W.W.* and other claims are located; these old trails have been destroyed partly by logging operations and, not being used by prospectors, they have not been kept in repair. The ore in the Alberni Consolidated group occurs in a similar system of quartz veins as was the case on the *W.W.W.*

Reference is made to these old claims to emphasize that such a system of quartz veins carrying gold values occurs, and to point out that the zone maintains continuity towards the north-west for several miles, but has not been thoroughly prospected. This range is really the backbone of Vancouver island, composed, as suggested by Clapp, "of a large Coast Range-like batholith, not yet largely unroofed, of which the exposed batholiths are merely protuberances or cupolas," and extending from Mount Arrowsmith south-easterly from Alberni to near the north-westerly end of the island, not, however, as one continuous range, but broken up at intervals by passes and valleys eroded during the glacial period.

Great Central Lake Section.

The most extensively mineralized area in the Alberni Division is the Great Central Lake section, occupying a large area from near the head of Great Central lake northerly and westerly to the boundary of the Division.

In this section are located the highest peaks in the Beaufort range. One, known as Big Interior mountain, with an elevation of about 7,000 feet above sea-level, contains a large mineralized deposit of copper-sulphide ore known as the *Big I.* group, which was discovered in 1899; it has passed through several vicissitudes until the group was Crown-granted during 1925. It is still owned by J. A. Drinkwater and M. Tebo, Drinkwater being one of the original locators.

The mineralized body on this property is continuous for a length of about 3,000 feet, as shown along the side of the mountain which has been eroded off; so that the mineral-deposit stands up like a long perpendicular wall, a great part of it being above a glacier that occupies the basin made as a result of the erosion.

Although the *Big I.* group has been bonded to some of the largest operators in the mining industry since its location in 1899, none of the negotiations were completed, and with the exception of annual assessment-work until the Crown grant was issued about a year ago no further development has been done since the writer's examination in 1916. The chief reasons have been the inaccessible location and distance from any transportation facilities, the only approach at present being by way of trail from the head of Great Central lake, about 10 miles up the Drinkwater river to near its head, where a climb of over 2,000 feet at an average incline of about 30° has to be made to Della lake, a glacial body of water near the base of the glacier already referred to.

In 1916 the writer made quite a thorough examination of the group, his report being published in the Annual Report for that year. Since then examinations have been made by engineers representing the Consolidated Mining and Smelting Company of Canada and other corporations, but none of these materialized into a sale. For this there are several good reasons, apart from considerations of the extent and grade of the ore-deposit. Transportation facilities have been somewhat improved by the construction of a branch of the Esquimalt & Nanaimo Railway to the foot of Great Central lake.

Only an owner backed by ample capital could develop the property into a shipping-mine, as the logical method of development would be to drive an adit from the Drinkwater river into the base of the mountain, which would give backs of some 3,000 feet or more under the summit of the outcrop and would furnish a haulage-way to transport ore to a point where a road 10 miles long down the Drinkwater river would land it at the head of Great Central lake. It is estimated that 300 horse-power could be developed from the "Della" waterfalls. The Drinkwater river has two falls, one 2½ miles from its mouth of 90 feet in 2,000 feet, estimated at 800 horse-power, and at the upper canyon rapids with a total fall of 970 feet in about 3 miles to the foot of "Della" falls, giving an estimated horse-power of 250.

The *Della*, adjoining the *Big I.*, contains gold-bearing quartz veins which occur paralleling the strike of the copper-ore deposit, but separated from it by Della lake.

The mineralization on Big Interior mountain extends westerly into the Clayoquot Division, where the *Ptarmigan* group is located across the summit of the range from the *Big I.* and is reached from the head of Bedwell (Bear) river, which flows into Bedwell sound, an arm of Clayoquot sound on the west coast of Vancouver island. Apparently the *Big I.* mineralized zone and the quartz-vein system extend south-easterly to Taylor river, which flows into Taylor arm of Sproat lake. Similar mineralized zones occur on Myra creek, near the head of Buttle lake in Strathcona Park, in the Nanaimo Division, a few miles north-westerly from the *Big I.* group.

Practically no prospecting has been done recently in and around Big Interior mountain; consequently the question of relationship between the *Big I.* group and the other mineralized zones here referred to has never been established, but the Great Central Lake section of the Alberni Mining Division merits thorough prospecting, although it will be found a difficult country to explore owing chiefly to the precipitous mountain-sides and the elevations reached by the various peaks in the range.

Taylor River Section.

The Taylor River section of the Alberni Division is only partly within the boundaries of the Esquimalt & Nanaimo land-grant. It is reached from the old town of Alberni by auto-road to

Sproat lake, a distance of about 10 miles; thence by motor-boat up Sproat lake and by way of Taylor arm to the head of the lake into which Taylor river flows.

The present trail up Taylor river should be extended to the pass in the mountains between the head of that river and the head of Kennedy (Elk) river, which flows into Kennedy lake, the foot of the lake being situated about 12 miles from the settlement of Tofino, the regular port of call for the C.P.R. steamer "Princess Maquinna."

Such a trail would form a connection between Alberni and Kennedy lake, and judging from the mineralized zone on which the *Morning* group is located about 4 miles up Taylor river from its mouth, also from the discoveries made on Kennedy river, it would appear as though this section fully merited being opened up for the benefit of prospectors.

Morning. This group consists of the *Morning*, *Morning No. 1*, and *Apex* claims, situated near the north bank of Taylor river, about 3½ miles above the mouth. The owners are A. L. Smith and associates, of Alberni. The property is reached by automobile from Alberni to Sproat lake and by launch up Sproat lake to the head of Taylor arm, and from there on foot by a good pack-trail. The group was examined in 1916 when it was known as the *Columbia*, the report being published in the Annual Report for that year; also in the 1923 Annual Report as the *Morning*. Further development was carried on in 1926. The ore occurs in a well-defined fissure-vein system, the vein-filler being chiefly quartz, in which occur gold and silver values.

Assays from samples taken in 1923 and one in 1926 are as follows:—

Description.	Gold.	Silver.	Copper.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.
No. 1. Across 16 inches from face of adit at fault-plane	0.72	0.5	.....	.....
No. 2. Across 12 inches from east side of crosscut at fault near face of adit	.....	.....	.....	.....
No. 3. Across 4 feet at 55 feet from face of adit	0.36	0.2	.....	.....
No. 4. Across 4 feet at 80 feet from face of adit	0.14	0.2	.....	.....
No. 5. Across 4 feet at 88 feet from face of adit	0.12	0.1	Trace	.....
No. 6. Across 4 feet about 246 feet from face of adit	Trace	Trace	.....	.....
No. 7. Across 4 feet near portal of adit	.....	.....	0.8	.....
Sample taken in 1926	0.18	3.0	1.0	Trace

It is noticeable that the gold values in all these samples are sufficient to warrant that more thorough prospecting be done on the property, as the shear-zone in which the vein occurs is continuous across the three claims. In the adit where most of the samples were taken the vein itself maintains continuity between well-defined walls for 343 feet from the portal, varying from 12 inches to 5 feet in width and mineralized with pyrite, arsenopyrite, pyrrhotite, and occasional crystals of zinc-blende and galena. The country-rock is typical of the Vancouver group of volcanics. The ore in the *Morning* group is well adapted for concentration, especially by the oil-flotation selective method.

Taylor river, while it is not reported as favourable for power purposes, has an ample flow for a concentrating-mill and domestic purposes. No water-power could be developed, according to the report of the Commission of Conservation of Canada, nearer than the mouth of Sproat river, just below the outlet of Sproat lake, where 3,000 horse-power is estimated could be developed.

About 2½ miles north from Sproat lake, and nearly paralleling it at an elevation of 190 feet higher, Great Central lake is situated, and it is suggested that by a diversion of the water from Great Central lake to Sproat lake 12,000 horse-power could be developed; also that at Stamp falls and Stamp river below the mouth of Ash river, 7 miles north-westerly from Alberni, another 12,000 horse-power could be developed; while at the upper Stamp falls, at the outlet of Great Central lake, another 2,000 horse-power could be developed. From these estimates we have within a radius of a few miles water-power possibilities from which 29,000 horse-power could be developed, according to the estimates of the Commission of Conservation.

During 1926 Andrew Smith, an old resident of Alberni, and his associates have been prospecting in the Taylor River section and on the south-west branch discovered ore-deposits, on which three claims, known as the *Falls No. 1*, *Falls No. 2*, and *Falls No. 3*, were located on October 12th last; these will be more thoroughly prospected during 1927.

Mr. Smith has made more than one trip from the head of Taylor river to the head of Kennedy river through a pass known as "Sutton" pass, named after the late William J. Sutton, who was the geologist for the Dunsmuir interests for several years, and Mr. Smith reports that he observed several veins in the country-rock which carried low values in gold. He considers this to be an attractive field for prospectors.

Alberni Canal Section.

The mountains adjacent to both sides of Alberni canal have been more or less prospected for lode minerals for over thirty years, and reference has already been made to the fact that mines located near the canal were developed up to a shipping-point stage as early as 1898. During recent years, or at least since the *Monitor* mine was closed down in 1922, the only active prospecting operations have been those carried on by Charles Lewis on the *Dauntless* group, which was examined and reported on in the Annual Report for 1918. As Mr. Lewis has been gradually extending the development-work on the group ever since then, it is again referred to in this report.

Dauntless. This group, consisting of the *Dauntless No. 1*, *Dauntless No. 2*, *Evelyn Lewis*, and *Cora*, is situated about 4 miles from Alberni, on the west side of the canal and within the boundaries of the Esquimalt & Nanaimo land-grant. The country-rock shows considerable shearing movement. It is classified as belonging to the Vancouver volcanic series. The mineralization consists principally of chalcopyrite and pyrite occurring in a gangue composed almost entirely of quartz, with which is also associated some breccia. The ore occurs in well-defined fissures in the shear-zone and is disseminated through the gangue rock as small lumps and grains. In two fissures separated by about 200 feet of country-rock the width of the ledge-matter in each is about 7 feet.

From the *Dauntless* group down the canal there are several Crown-granted claims located at varying distances from the canal and connected with it by trails which are now in disrepair.

The rock formations intersected by the Alberni canal belong generally to Clapp's Vancouver group, composed chiefly of metamorphosed basic volcanic rocks with interbedded limestone, and nearly all of the ore-deposits so far discovered on both sides of the canal below the *Dauntless* group belong to the contact-metamorphic type, occurring at or near the contacts between the limestone and volcanic rocks.

This fact has had a great influence in retarding development in this section of the Alberni Mining Division, because the ore-deposits are lenticular and in almost every case where any serious development had been attempted the lenses that outcrop on the surface have wedged out as deeper work was done, the operator became discouraged and quit work without extending it to determine whether or not other lenses could be discovered.

Grizzly. This claim is about 1 mile south of the *Duke of York* dam on China creek and about 10 miles south-easterly from Port Alberni. It is owned by Ernest Loubert, Port Alberni. The route by which the *Grizzly* is reached at present is via wagon-road from Port Alberni to the dam across China creek on the old *Duke of York* hydraulic mine, where the intake for the Port Alberni city waterworks is located. China creek is crossed near the dam on a foot-log, and there is a trail from the crossing to the property, distant about 2 miles in a westerly direction.

On this claim there occurs an outcrop of native arsenic of some extent, from which specimens have been sold to some of the universities and museums, as the writer is informed, and a new industry started on a limited scale. The specimens are generally about 1 lb. in weight and are man-packed from the prospect and forwarded either by mail or express from Port Alberni. Sufficient prospecting to ascertain the conditions at depth has not yet been done, but it is mentioned as it is the only deposit of native arsenic reported in the Western District.

Magnetite-deposits.

Several deposits of magnetite occur in the Alberni Division. These are located at widely disconnected points, some near the western side of Alberni canal, about 18 miles from Port Alberni; others on Copper island in Barkley sound; on the Sarita river near the easterly

entrance to Barkley sound; on the west side of Henderson lake, in the mountains back of Kildonan cannery in Uchucklesit harbour; also on Sechart peninsula between the middle and western channels of Barkley sound. All of these deposits were examined in 1916 and reports published in the Annual Report for that year.

For the reason that there is no market for this ore none of these deposits, most of which are Crown-granted, are being worked and most of the trails built twenty to twenty-five years ago are impassable at the present time.

Cinnabar Ore.

On one of the earliest locations made on Vancouver island, a description of which is included in the Annual Report for 1896 by W. A. Carlyle, the then Provincial Mineralogist, there is a deposit of cinnabar, the ore of mercury. This is situated on Sechart peninsula, about half a mile from the shore near the old whaling-station.

No work has been done on it since 1915, when T. Golby, the owner, drove a tunnel 45 feet long through a narrow ridge to turn the water from the creek and expose the bed-rock, in which narrow veinlets containing cinnabar had been exposed. The deposit is here referred to because inquiries are often made about the occurrence, which is the only one known on Vancouver island.

CLAYOQUOT MINING DIVISION.

The Clayoquot Division occupies an area on the west coast of Vancouver island from Ucluelet peninsula to Kyuquot sound. It is bounded on the east by the summit of the Beaufort range.

A notable feature with regard to the Clayoquot Division is the number of inlets or fiords which penetrate into the mainland of Vancouver island from the Pacific ocean, and which afford numerous well-sheltered harbours, as well as a long mileage of inland waters, by which prospectors are enabled to work from base camps on the shores of any of these numerous inlets.

There are a number of rivers in the Division, all of which are influenced by the tides for a considerable distance, and on a rising tide are navigable by shallow-draught launches for short distances and for much greater distances by canoes. Some of the valleys along these rivers are of considerable width, but usually narrow down to gulches and box canyons within a few miles of the mouths.

The water-power possibilities on the rivers in the Clayoquot Division were not investigated by the Commission of Conservation. The report merely states that they are situated in a region of large annual precipitation, and many have steep grades and would probably afford several water-power sites. Some attention has been paid to Gold river and an application for a site for a water-power up to 4,000 horse-power has been made, but no attempt to develop it has been yet recorded.

Prospecting.

The south-easterly part of the Clayoquot Division has been the most thoroughly prospected, especially on Kennedy river, Tofino creek and inlet, and Bedwell river, also around the vicinity of Catface mountain, in the vicinity of Tofino and Clayoquot settlements at the entrance to Clayoquot sound.

Most of the prospecting in this section was done between 1898 and 1900, when there were more than fifty *bona-fide* prospectors in the district, most of whom made their headquarters at Clayoquot settlement on Stubbs island in the Broken Channel entrance to Clayoquot sound. A part of the Division extends into the southern portion of Strathcona Park, but except in the vicinity of the head of Bedwell river no prospecting has been done within the park boundaries in that Division.

The north-westerly section of the Division—that is, in the neighbourhood of Nootka sound—has been fairly well prospected, especially on Muchalat arm and along the lower part of Gold river, Tlupana arm, Tasis canal, and Zeballos river.

The interior section of the Division is extremely mountainous. The summit of the range which forms the north-eastern boundary contains many peaks with saw-tooth structure, which reach to elevations of 6,000 feet and upwards within a comparatively short distance from the ocean shore-line, and on several of these peaks there are glaciers and snow-fields of very considerable extent. Except to a few prospectors and trappers this interior section is *terra incognita*, and since the disappearance of the majority of the prospectors who were working between 1898 and 1900 the probabilities are that this section will remain unexplored for years.

The early discoveries of mineral-deposits consisted of chalcopyrite associated with magnetite that carried generally from 6 to 8 per cent. copper, with quite low gold and silver values. Many of these prospects were developed on a limited scale, the result generally being that the ore-bodies, which are of the metamorphic-contact type, proved to be lenticular in structure, and after the lenses exposed on the outcropping wedged out the operators were unable to obtain capital to continue further development, or rather to systematically prospect the deposit.

Indian Chief.

The *Indian Chief* group, operated by the Tidewater Copper Company from 1916 to 1923, is the only property which has been developed and equipped in an extensive manner in Clayoquot Division. Since 1923 the property has been idle, and the Tidewater Copper Company having defaulted on its bonded debt, the assets of the company were sold at public auction and bought in by a committee acting as trustees for the debenture-holders. Since the sale no plans have been announced by the purchasers with regard to resuming operations. The property is fully described in the Annual Reports for 1917, 1920, 1922, and 1923.

Apparently this property has suffered from the management of its affairs. The ore-bodies, while low grade, are extensive and plenty of possibilities remain for further development.

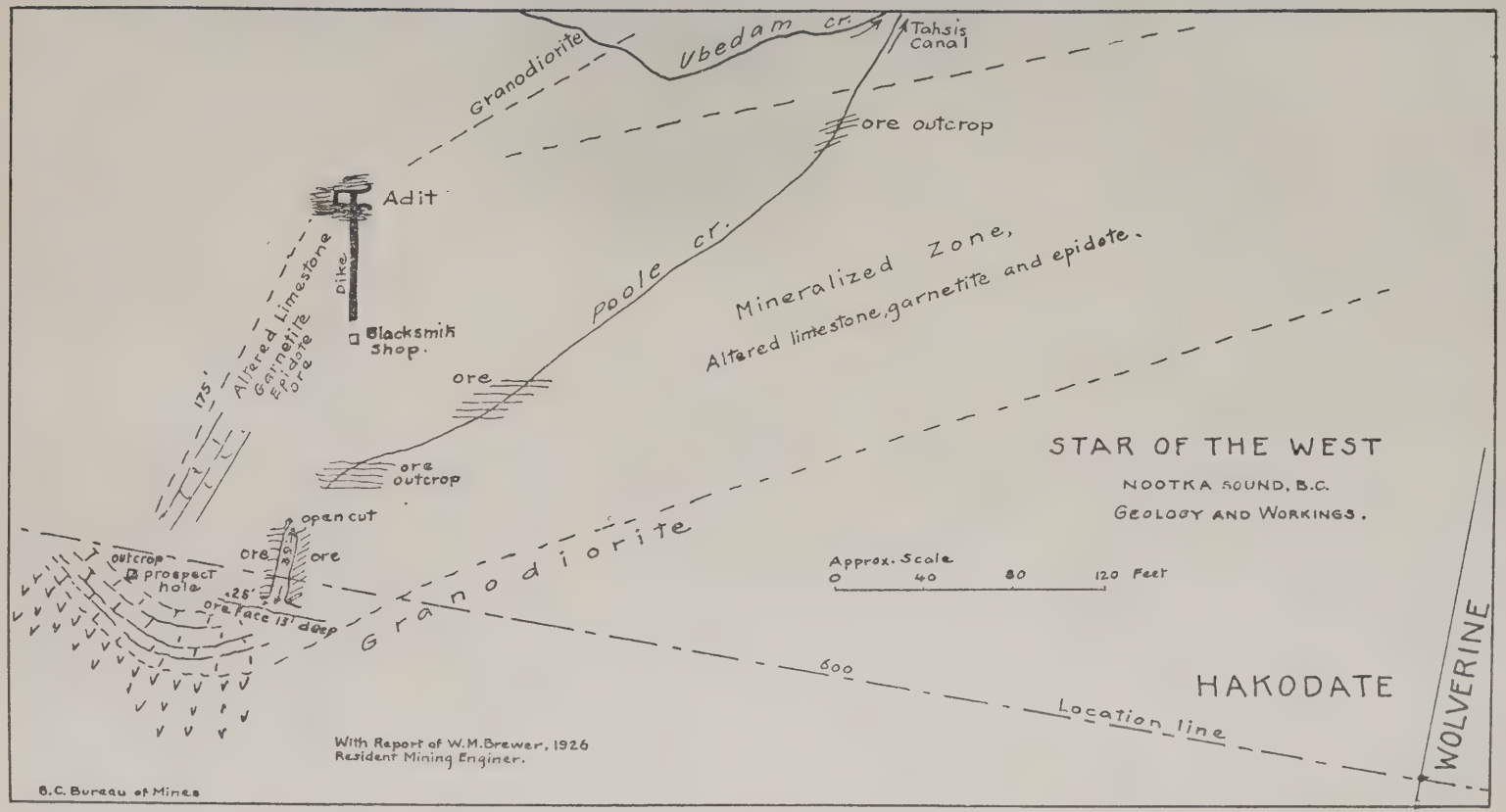
Star of the West.

This group, owned by William H. Poole, of Nootka, contains three claims—*Star of the West, Wolverine,* and *Hakadate;* all the work so far done has been on the first two. The south-west line of the *Hakadate* is approximately 6,000 feet from the beach, near where there is a good site for bunkers and wharf with good anchorage in sheltered deep water. These claims are in good standing, although they have not yet been Crown-granted. The location is at the head of Tasis canal, approximately 22 miles from the Nootka cannery and post-office in a northerly direction, but only about 6 miles from the new pilchard reduction-works of the Canadian Packing Company, Limited, at the head of Esperanza inlet, where a post-office was established in 1926, designated as Cee Pee Cee. This plant is connected with the *Star of the West* group by sheltered water through the narrows between Esperanza inlet and Tasis canal.

Although at present this group can only be considered as a prospect with very promising possibilities, yet the extensive systematic prospecting-work by the owner has been done in such a thorough manner that the property to-day offers many attractive features and shows every indication that it can easily be developed into a mine of commercial importance. The property has been previously described in the Annual Reports for 1922, 1923, and 1925. Since the last report Mr. Poole has done further work and has proven that the extent of the mineralized zones is greater than the earlier work indicated would be the case.

It is unnecessary to repeat the previous descriptions of the property, but a table of assays of samples taken on all examinations is considered useful; the last six samples were taken in 1926.

Description.	Gold.	Silver.	Copper.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.
Star of the West	0.04	4.0	7.0	15.0
General sample from prospect-hole	0.24	1.0	9.0	14.0
Hakadate—				
From open-cut	0.16	1.5	16.0	.....
175 feet from open-cut	Trace	Trace	2.5	.....
Across gulch, in garnetite gangue	0.04	0.8	7.5	.....
From open crosscut across 4 feet of solid ore	Trace	1.0	3.7	1.0
Selected ore on dump from the above crosscut	0.10	1.0	12.0	1.0
From the above crosscut in hole after shot fired	0.10	1.0	6.9	1.0
General sample from prospect-hole 150 feet south-easterly from main workings	Trace	Trace	4.0	3.0
No. 1 sample	Trace	Trace	Trace	2.0
No. 2 sample	0.10	1.0	6.0	4.0
No. 3 sample	0.12	1.0	9.0	.....
No. 4 sample	0.04	2.2	15.0	2.0
Star of the West—				
No. 1 sample, from prospect-work	Trace	Trace	0.2	2.0
No. 2 sample, from same working	0.70	2.6	9.0	6.0


Granodiorite
Ubedam cr.
Tahsis Canal
ore outcrop
Adit
dike
Blacksmith Shop.
Altered Limestone
Garnetite
Epidote
ore
175'
poole cr.
Mineralized Zone,
Altered limestone, garnetite and epidote.
ore
ore outcrop
STAR OF THE WEST
NOOTKA SOUND, B.C.
GEOLOGY AND WORKINGS.
open cut
outcrop
prospect hole
ore
ore
25'
ore face 13' deep
Granodiorite
Approx. Scale
0 40 80 120 Feet
600
Location line
HAKODATE
WOLVERINE
With Report of W.M. Brewer, 1926
Resident Mining Engineer.
B.C. Bureau of Mines

In addition to the ore exposed in the workings, outcroppings occur between the adit on the north contact and the open-cut on the south contact, which indicate that the mineralized zone at that point is approximately 175 feet wide, composed chiefly of altered limestone, garnetite, and epidote, with ore disseminated irregularly through this gangue. The zone is traversed diagonally by Poole creek, which has very precipitous banks, difficult to prospect, but with low-grade ore-outcroppings exposed in the south-easterly side. One of these outcroppings from the bed of the creek near the head is represented by No. 2 sample.

From the records of the Mining Recorder at Clayoquot it is noticeable that five different sections of the Clayoquot Division are represented by new locations of mineral claims made during 1926. These are the Zeballos river, Muchalat arm, Tofino (Deer) creek, Bedwell river, and Kennedy (Elk) river. The locations made on the Zeballos river are at points between 7 and 9 miles from tide-water and in the neighbourhood of the confluence between the main river and East fork. Twelve claims in all were staked, designated as *Ehatset Nos. 1* to *12*.

These claims were staked in September and October, 1926, so that no prospecting-work has been done on them. They were not examined by the writer. Undoubtedly the incentive that led the prospectors into that section of the Mining Division was the discovery that was made in 1924 of a narrow quartz gash-vein about 3 miles from the mouth of Zeballos river. Some specimen samples from this prospect assayed several ounces in gold to the ton, some going as high as 22.3 oz. During the season of 1925 the English syndicate that had purchased 51 per cent. of the prospect when it was first staked employed some good miners to thoroughly prospect for an extension of the narrow vein. After working for several months no encouraging indications of further ore were found; consequently the syndicate abandoned the work. During the time this work was going on a good trail was built with Government assistance from the mouth of Zeballos river to the group, a distance of about 3 miles. This trail has been of assistance to prospectors. Presumably during the coming season prospecting-work will be done on these newly located claims.

White. This group is one of the most important and attractive, so far as exposures of high-grade ore-deposits are concerned, in the Clayoquot Division. The group is located on Tofino creek, about 2 miles from the mouth on the west side of the creek, which flows into Tofino inlet of Clayoquot sound; it contains the *White*, *Norman*, *Walton*, *Dunlop*, and *Alfa* claims, occupying an area of approximately 250 acres.

The property is owned by William Walton, of Tofino, and Duncan McMillan, of Victoria. It was quite fully described in the Annual Reports for 1919 and 1921, but is again referred to in this report because further prospecting has been done by the owners, which is so encouraging as to warrant the carrying-out of a still more thorough systematic and extensive programme of development-work.

The mine-workings are about 1½ miles from the head of Tofino inlet, where there is good anchorage and shelter for a site for a wharf and bunkers; also a good site for a concentrating plant near the mouth of Tofino (Deer) creek, which carries an ample supply of water for use in a plant, although not sufficient for development of power.

The occurrences of copper-sulphide ores, chiefly chalcopyrite, occur in several outcrops on a bench, about an acre in area, about 800 feet elevation up the side of a steep mountain. In order to determine the extent and continuity at depth of the deposits diamond-drilling should be done. There are several lenses of ore outcropping in country-rock belonging to the Vancouver group of volcanic rocks, with interbedded beds of limestone and associated with garnetite, epidote, quartz, tremolite, pyroxene, and actinolite. Efforts have been made to determine the source of the ore found on the bench mentioned, which apparently is from a wide fissure in the precipitous mountain-side overlooking the bench or terrace, on which the several outcroppings of chalcopyrite occur; and although the owners are evidently using every endeavour to locate the source of the ore to determine its extent and continuity at depth, it is slow work and requires the expenditure of more capital than the owners can command.

Samples thoroughly representative of the outcroppings referred to assay as follows:—No. 1: Gold, trace; silver, 1.6 oz. to the ton; copper, 11.5 per cent. No. 2: Gold, trace; silver, 1.6 oz. to the ton; copper, 12.5 per cent.

It is impossible to form any estimate as to the "probable" tonnage of ore in sight because of insufficient development-work, and so far as the tonnage of "actual" ore exposed by the open-cut work in the outcroppings on the bench mentioned, that is problematical. In some

places the ore appears to occur as a blanket over most of the area on the bench, but some of the lenses show indications of extending to an undetermined depth; they are not, however, sufficiently exposed to allow an estimate of tonnage. The future of this property depends on further thorough prospecting, which should be by diamond-drilling as the structural conditions lend themselves to such prospecting at a minimum cost.

Kennedy River Section.

During 1926 the Kennedy (Elk) River section has been prospected considerably, and in the fall several new locations were made in the neighbourhood of the old *Rose Marie* group; it was too late in the year to examine these.

In this section narrow quartz veins occur in the Vancouver series of volcanic rocks, which is the prevailing country-rock. The quartz from many of these fissures carries values in free gold ranging from a few dollars to 2 or 3 oz. of gold to the ton, and several of these are located in close proximity to the river, where there are good sites for concentrating plants with an ample supply of water. Some of these occurrences offer good opportunities for men experienced in mining and milling gold-bearing ore to make a stake, but are not large enough for company organization.

Bedwell River Section.

Several new locations have been made on the east side of Bedwell river, about 4 miles from its mouth, which, however, have not yet been prospected to any appreciable extent.

Ptarmigan. The most important of the locations in this section are in the neighbourhood of the head of Bedwell river in the high range of mountains which forms the divide between the waters flowing south-easterly into Great Central lake and those flowing westerly into Clayoquot sound. The *Ptarmigan* group contains the following Crown-granted claims: *Big I. No. 6*, *Big I. No. 7*, *Great Central Lake No. 5*, and *Great Central Lake No. 6*, situated on the westerly slope of Big Interior mountain at an elevation of about 6,300 feet.

The group is owned by the Ptarmigan Mines Company, of London, England, which has kept the taxes paid up to date, although the property has not been actively operated since 1914, when on the declaration of war by Great Britain the entire staff and force of miners left for the front, leaving winter supplies in the camp, as well as about 1½ tons of explosives on the bank of Bedwell river at its mouth, and the entire plant for an aerial tramway of 4 miles in length that had been purchased from the Tyee Copper Company earlier in the year. The company was an organization promoted by the Earl of Denbigh, who authorized an expenditure of about $40,000 for building a road, bridges, and development-work on the claims.

The mineralized zone on the *Ptarmigan* is apparently an extension of the zone already described in this report that occurs on the *Big I.* group on Big Interior mountain, in the Alberni Division. The property is mentioned in this report more for the purpose of attracting attention to the mineralization of that portion of Vancouver island than for any other reason, and as the payment of taxes is kept up it may be presumed that it is the intention of the company at some future time to resume the work and fully develop the property, which is undoubtedly a very promising prospect.

The transportation facilities necessary to connect the mine-workings on the *Ptarmigan* group with tide-water would necessitate an aerial tramway from near the summit of the mountain to the head of Bedwell river, and from there by water-grade tramway about 12 miles in length to the mouth of Bedwell river, where there is a good site with deep sheltered water for a wharf and bunkers.

Gold-bearing Quartz Veins.—Near the head of Bedwell river there are some comparatively narrow gold-bearing quartz veins in the Vancouver series of volcanic rocks, which is the prevailing country-rock, and as late as 1897 more or less placer gold was mined from the bars in the river for quite a considerable distance below its head. The placer operations were carried on principally by Chinamen and it has never been possible to ascertain how much gold was taken out.

The last work done on the quartz veins was that by J. H. Woodworth and associates in 1921 and 1922, when a small mill was erected and several men employed in mining and milling. Late in the fall of 1922 the entire camp, including the mill, was destroyed by fire and later in the

winter the main bridge as well as some smaller ones across Bedwell river were carried away by high water. The road from the base of the mountain to the mouth of the river was also badly damaged by high water and no attempt has since been made to repair the road or rebuild the bridges.

QUATSINO MINING DIVISION.

The Quatsino Mining Division occupies the smallest area of any of the Divisions in the Western Mineral Survey District (No. 6). Although there has not been any production from metalliferous mines in this Division during 1926, there has been considerable interest shown and extensive development-work done on several properties. Twenty-eight certificates of improvement were recorded during 1926, and in addition there were about the same number of un-Crown-granted claims in good standing, on which assessment-work had been done during the year.

In addition to lode-mining in the Quatsino Division, there is a non-metallic industry, which is being developed by the owners of two properties situated on Easy creek, a tributary to Kokshittle inlet, Kyuquot sound. This industry is based on deposits of pyrophyllite and natro-alunite which occur on both sides of Easy creek.

West Arm of Quatsino Sound.

This arm extends from Quatsino narrows, that connect the main Quatsino sound with the West arm, in a westerly direction to the head of the arm, where the settlement of Holberg is situated and where the waters from Spruce river enter the arm.

Millington. This group contains the following six claims: *Crackerjack*, *Millington*, *Hood*, *Molly B.*, *Molly Bawn*, and *Paystreak*, owned by a syndicate composed of James Spooner, Dave Spooner, Ed. Spooner, Pete Obling (post-office address, Holberg), and Alfred Hood, of Victoria. The group was examined on August 27th, 1926, when samples were taken from new work done since it was examined in 1919 and 1924 and reported on in the Annual Reports for those years.

The group is situated about 3 miles above the mouth of Spruce river, on the westerly side, at an elevation of about 500 feet above sea-level, and is reached by a good wagon-road from Holberg to the crossing of the river, which is made by a platform hanging on a cable, and a good pack-horse trail from the river crossing to the claims. The cable crossing of the river was constructed during the late fall of 1926 after a new bridge that had been built in 1925 had been carried out by exceptionally high waters.

The rock formation in the vicinity of the claims is classified by Victor Dolmage, Geological Survey of Canada, as a highly amygdaloidal basalt in which occur as impregnations several lenses of solid bornite-copper ore. The development-work done previous to this year was confined to the *Crackerjack* claim and consisted of two adits, some open-cuts, and surface-stripping.

The No. 1 adit is at an elevation of about 490 feet. It is about 60 feet long with an open-cut approach about 15 feet long. The main open-cut on the surface above the No. 1 adit is 30 feet long and 4 feet deep. The No. 2 adit is about 110 feet lower elevation than the No. 1 adit. It is driven in the right bank of a creek, a length of about 70 feet, with drifts to the right and left, starting from a point 50 feet from the portal of the adit. The drift to the left is 21 feet and that to the right 15 feet long. Other work consists of a crosscut 40 feet long driven from the left drift in the lower adit; also a second drift driven 35 feet long, starting from opposite to the entrance to the crosscut just referred to.

The work done during 1926 consists of a No. 3 adit driven as a crosscut about 100 feet lower elevation than the No. 2 adit. The object of driving the No. 3 adit is for the reason that its elevation is only a little above the cabin camp, and the intention is to use it in future for the main haulage-way for transporting ore after it is connected by raises with the workings at higher levels; also in order to crosscut the formation below the higher workings and prove up the conditions with regard to extension of the ore-bodies exposed in those workings. In order to accomplish this purpose the adit will have to be driven about 300 feet, but at the time of the examination it was only 35 feet long under cover with an open-cut approach, all in solid rock 18 feet long. Stripping has also been done across a vein that outcrops in the bed of the creek between the No. 1 and No. 2 adits. This stripping exposed a lens of ore 43 feet long, with the width undetermined.

UATED ON

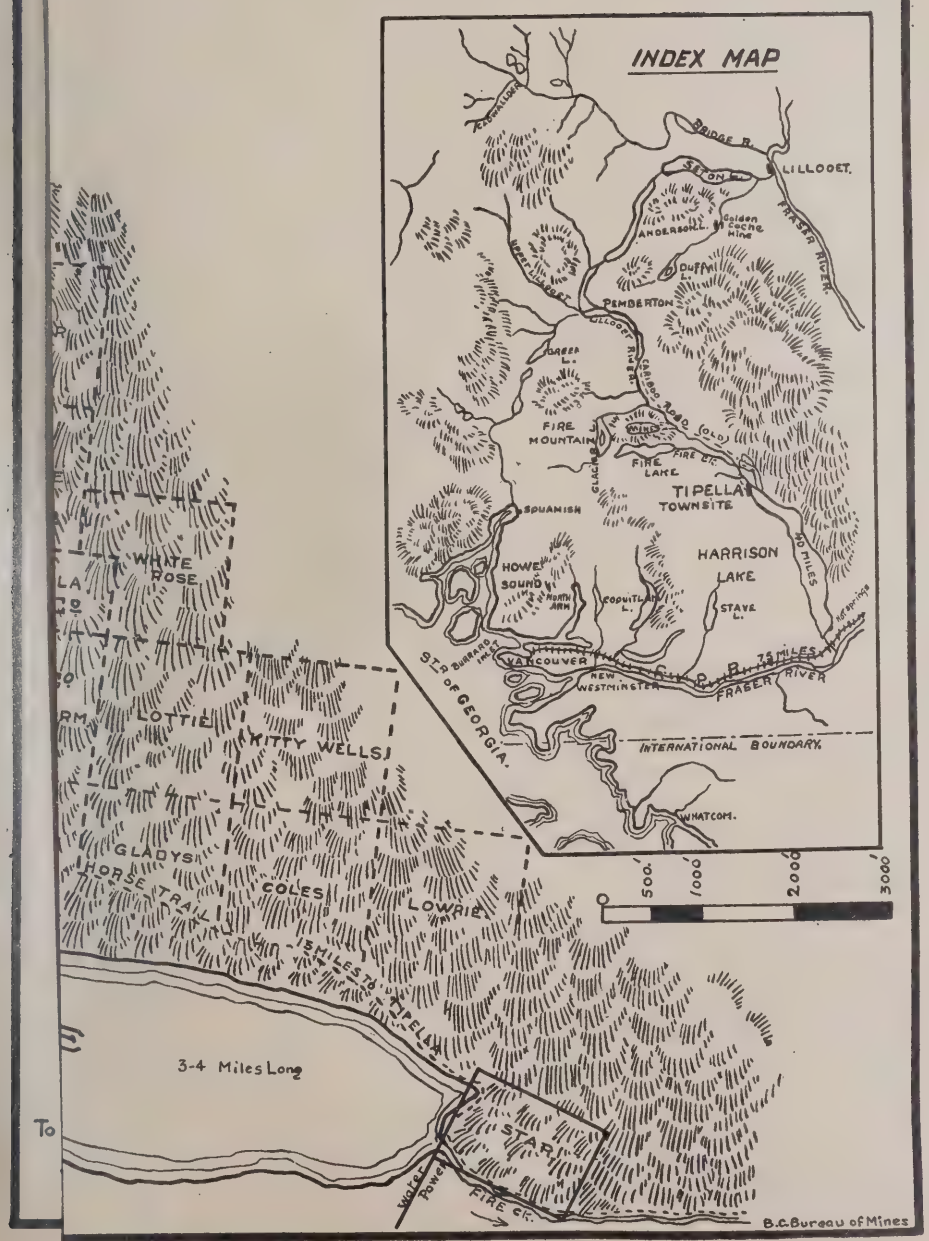
STER DIST B. C.

TIES OF THE

FIRE LAKE GOLD MINES, LTD.

NG CO LTD. TELLURIDE OR GOLD

URE MINING AND DEVELOPMENT CO LTD.



MAP OF MINERAL CLAIMS SITUATED ON FIRE MOUNTAIN.

NEW WESTMINSTER DIST B. C.

SHEWING PROPERTIES OF THE

FIRE MT GOLD MINING Co LTD. FIRE LAKE GOLD MINES, LTD. GOLD RANGE EXPLORING AND MINING Co LTD. TELLURIDE OR GOLD MINING Co LTD. GOLDEN TREASURE MINING AND DEVELOPMENT Co LTD.

GLACIER LAKE.

FIRE MT

7600 FT. EL.

GLACIER

BLAINE · ALICE · MYRTLE · TOLEDO · ALICE · MONTEREY · COCKEPAN · WASHINGTON · RORNET · GOOD BET

BABY T.C.Co

WONDERFUL T.G.Co

BARKODLA.

GOLDEN EAGLE

T.C.Co TELLURIUM 588

T.G.Co PRINCE 1695

PRINCE FR 1720

WONDERFUL FR 1680

FIRE MOUNTAIN FR 1747

F.M.Co NEPTUNE 1687

T.G.Co GOLD QUEEN 1695

F.L.Co MARCH ON 1709

BEE

GOOD BUCK

BURDNER FR 1748

F.M.Co MIDAS 1693

HONEY SPINNER 1695

F.M.Co

KING 1721

KING FR?

F.M.Co FREE GOLD 1686

F.M.Co PRINCESS 1697

CROWN POINT F.L.Co

F.L.Co ALBERT FR 1731

F.L.Co ROYAL FR 1726

F.L.Co VICTORIA FR 1728

F.L.Co MORNING

WAR HORSE 1700

F.M.Co

F.L.Co

F.L.Co HARD SCRABBLE 1698

DANDY FR?

DANDY 1723

G.R.M.Co

F.L.Co HOOK DAY 1699

HOOK DAY FR 1703

HOOK DAY FR 1703 EL.

F.L.Co LAKE FR 1705

KLONDYKE FR 170

KLONDYKE

F.L.Co

F.L.Co SHOREFR 1704

SUNDOG

F.L.Co

CROWSHOE

3400 FT ELEVATION.

FIRE ISLE

F I R E L A K E

3-4 Miles Long

G.R.M.Co BLUE BELL

G.R.M.Co GOODWIN

GOODWIN FR

G.R.M.Co RUSTLER 1755

RUSTLER FR 1755

G.R.M.Co

G.R.M.Co TIPPERARY

G.R.M.Co

G.R.M.Co DIVIDEND 1714

DIVIDEND FR 1714

G.R.M.Co WINNING CARD

WHITE ROCK

CRATER LAKE

G.R.M.Co SULTAN 1717

SULTAN FR 1716

G.T.Co SULTANA

RANGER

G.R.M.Co STALICE 1757

G.R.M.Co

FIRE FR 1764

G.R.M.Co

G.R.M.Co CHANCERY 1756

G.R.M.Co FIREFLY 1758

G.R.M.Co INDIAN CHIEF 1759

G.R.M.Co

ECHO FR 1760

ECHO

G.R.M.Co

NELLIE

SWIFTSURE

SUNSHINE

G.T.Co

G.T.Co

STELLA

G.T.Co

WHITE ROSE

G.T.Co

SNOW STORM

G.T.Co

LOTTIE

KITTY WELLS

GLADYS

HORSE TRAIL

COLES

LOWRIE

3 MILES TO TIPELLA

TIPELLA

STAR

WOLFE Power

FIRE Cr.

INDEX MAP

BRIDGE R.

SETON L.

LILLOOET

FRASER RIVER

ANDERSON L.

Golden Eagle mine

DUFFY

PEMBERTON

BIRKEN

LILLOOET R.

FIRE MOUNTAIN

FIRE L.

TIPELLA TOWNSITE

SQUAMISH

HOWE SOUND

HARRISON LAKE

STAVE L.

COQUITLAM L.

NORTH ARM

VANCOUVER

NEW WESTMINSTER

FRASER RIVER

STRAIT OF GEORGIA.

INTERNATIONAL BOUNDARY

WHATCOM.

500. 1000 2000 3000

To accompany Report of W.M. Brewer R.E. Nanaimo B.C.

B.C. Bureau of Mines

A sample fairly representing the ore exposed in the stripping between the Nos. 1 and 2 adits assayed: Gold, trace; silver, 0.2 oz. to the ton; copper, 5 per cent.; zinc, 1 per cent. The assays from samples taken from various points in the workings during previous examinations are given in former reports referred to.

South-east Arm of Quatsino Sound.

The South-east arm of Quatsino sound extends from the southerly side of the main sound opposite Limestone island to Port Alice, the headquarters of the Whalen Pulp Company, and is enclosed on both sides by high ranges of mountains which have been considerably prospected ever since the first settlement by white men about 1894. A number of mineral claims have been staked from time to time and most of them are Crown-granted. June Landing, about 6 miles up from the Quatsino settlement, is the starting-point for the *Alice Lake* and *Old Sport* groups. Until last fall the route from June Landing to Alice lake, a distance of about 6 miles, was by pack-horse trail with heavy grades and during rainy season much mud.

During last summer the Coast Copper Company, which owns the *Old Sport* group, with the assistance of a grant from the Mines Development Fund, constructed an automobile-road from June Landing to Alice lake, 5 miles in length, on which a 1-ton auto-truck is now used. This improvement to transportation facilities of this section is quite important both to prospectors and operators.

During the coming summer the Coast Copper Company also proposes to extend this auto-truck road from the east shore of Alice lake to the foot of Kathleen lake, a distance of about 3½ miles, which will afford easy access to the *Old Sport* and other properties in the neighbourhood of Elk lake, also to the summit between that chain of lakes and Nimpkish lake, on the east side of Vancouver island.

Alice Lake. This group contains the *Alice Lake, Lucky Strike, Pay Streak, Galena, Iron Knob,* and *Olga* claims, situated near the west shore of Alice lake and near the auto-truck road completed last summer from June Landing. The group is owned by William Clancy, W. D. Kinsey, and associates, of Quatsino. The claims were staked and recorded in July, 1924, since which time the owners have been intensively prospecting, as well as having driven a crosscut adit 95 feet long under cover in addition to open-cut approach.

This adit was driven with the expectation of intersecting a deposit of gold-silver-zinc ore which outcrops on the surface about 50 feet higher than the level of the adit mentioned. The results from driving this adit were disappointing and during the past summer the owners have been further developing by drifting along the strike of the ore-body. This drift was in 35 feet (September 2nd, 1926, when the property was examined) on an ore-body between 12 and 18 inches wide, having its strike S. 45° E. and its dip varying from 30° south-westerly to vertical. A representative sample was taken from this work which assayed: Gold, 0.80 oz.; silver, 2.2 oz. to the ton; copper, *nil;* zinc, 8 per cent.

The country-rock in the vicinity of the *Alice Lake* group belongs to the Vancouver series as classified by Dawson, with interbedded limestone that has been intruded by dykes of felsite porphyry and other igneous rocks.

Occurrences of ore on the *Alice Lake* group appear from surface indications to belong to the contact-metamorphic type, with limestone as the hanging-wall and felsite porphyry the foot-wall, but recent prospecting would seem to indicate that the ore occurs as a replacement in the limestone instead of as the contact-metamorphic type. The attractive feature with regard to this property is the persistency and regularity maintained by the gold values as shown by all the sampling that has been done, and the owners propose to continue development-work systematically to determine the commercial value of the property.

Elk Lake Section.

Coast Copper Co. By far the most important operations being carried on in the Quatsino Division are those of the Coast Copper Company, a subsidiary of the Consolidated Mining and Smelting Company of Canada. The groups known as the *Old Sport* mine have been steadily developed since 1916, when the majority of the stock of the Coast Copper Company was acquired by the Consolidated Company. This property has been reported on in the Annual Reports for the years 1916, 1917, 1919, 1924, and 1925.

The name of the *Old Sport* mine is given to the various groups of claims which constitute the property. These are as follows: *Penstock, Old Sport No. 1, Old Sport No. 2, Idaho, Machets,*

Robin, Eagle, Bean, Merry Widow, Martin, Hemlock, Oak, and *Teal Fraction.* Each of these groups contains a varying number of mineral claims, totalling seventy-two claims, many of them Crown-granted and Crown grants applied for the rest. Most of these claims are located on the south-west side of Elk lake, but some are on Canyon creek, Raging river, and Benson river in close proximity to the main group. Elk lake is one of and near the source of a chain of lakes which receive the waters flowing down Raging river, Canyon creek, and Benson river, all torrential streams that have their sources in the high range of mountains that forms the divide which separates the waters that flow into Quatsino sound from those which flow into Nimpkish lake.

These lakes are Elk, Kathleen, and Alice, which have their outlet down Marble creek, emptying into Rupert arm of Quatsino sound. Victoria lake, the head of which is a few miles south from Elk lake, may also be considered in this chain because the waters from it flow into Alice lake through a short unnamed stream.

The property is reached by auto-road from June Landing, on the South-east arm of Quatsino sound, to Alice lake, by crossing that lake by gasolene-launch, then pack-horse trail 3½ miles to Kathleen lake; thence gasolene-launch from the head to the foot of that lake, and along a short portage with pack-horse trail from there to the mining camp on the south-west shore of Elk lake.

It is unnecessary in this report to refer to the history, geology, and ore-deposits of the *Old Sport,* which are given quite fully in the Annual Report for 1924, so that the following is merely a detailed report respecting the footage of working-openings and diamond-drilling during 1926, together with the total number of feet done on the property to date, including information relative to the power plant on Raging river.

During 1926 there has been done 788.5 feet of drifting, 133 feet of crosscutting, 72.5 feet of raising, and 357 feet of sinking, making a total of 1,351 feet of working-openings, in addition to which there has been 1,487 feet of diamond-drilling. The work done during 1926 brings the development-work on the property up to that point where the ore-deposits have been opened up to a depth of 1,200 feet on the dip and for a length of approximately 3,000 feet.

The total development-work done to date is as follows: Prior to and including the year 1923 there was a total footage of drifting, crosscutting, raising, and sinking of 7,295.5 feet, and 12,465.4 of diamond-drilling. The following table shows the work done during the last three years:—

Description.	1924.	1925.	1926.
	Feet.	Feet.	Feet.
Drifting	1,925.0	2,021.0	788.5
Crosscutting	132.5	721.0	133.0
Raising	114.5	17.5	72.5
Sinking	.....	.....	357.0
Diamond-drilling	540.0	4,526.8	1,487.0

During 1926 the company installed at Raging river a 1,000-cubic-foot Ingersoll-Rand 2-stage air-compressor. It is controlled by a Pelton governor and driven by a 3-foot Pelton wheel, working under a 165-foot head and using 900 cubic feet of water a minute. This is conveyed from Raging River falls, a distance of 1,700 feet, in a 3-foot by 15-inch flume, constructed of 2-inch plank, which carries 1,200 cubic feet. The machine is automatic in all details, such as oil-supply, air-load, and speed. The air is conveyed to the mine, a distance of 3,300 feet, in a 4-inch pipe. The old plant will be retained.

Kyuquot Sound Section.

The Kyuquot Sound section of the Quatsino Division has not been very thoroughly prospected, except near and at the head of Kokshittle arm, where a group of claims was located in 1919 by George Nordstrom and H. O. Bergh, which was described in the Annual Report for 1920 under the heading *Caledonia* group.

Natro-alunite and Pyrophyllite Deposits.—On Easy creek, a tributary of Kokshittle arm, near its entrance, there occur extensive deposits of these minerals, which were described in the Annual Report for 1920; as there has been no activity in mining since, it is not deemed necessary to repeat the descriptions here.

NANAIMO MINING DIVISION.

The Nanaimo Division embraces a much greater area than any other in No. 6 District. Although for administrative purposes the district is considered as a unit, geographically it is separated into three main units for the reason that a portion of the Division is situated on the Mainland, another portion embraces all of the islands between the Mainland and Vancouver island, and a third unit is the strip of land paralleling the east coast of Vancouver island and extending from near Ladysmith north-westerly to Cape Scott, the extreme north-westerly point on the island.

The mineral industry in Nanaimo Division includes lode-mining, coal-mining, and the production of some non-metallic and building materials.

Developed and Undeveloped Water-power.

The Division is especially favoured with rivers that furnish most excellent potential sites for the development of extensive water-powers. These are situated on the Mainland, some of the islands, and Vancouver island; the most important among these are:—

Powell river, where 48,000 horse-power has been developed by the Powell River Company.

Forbes river, tributary of Humphrey channel, estimated horse-power at the cascades 1 mile at the mouth, 1,000.

Toba inlet, from the following tributaries:—

Chewson creek, from the cascades near the mouth, estimated 5,000 horse-power.

Hazel creek, 8 miles up Toba at McKenzie falls, estimated 3,500 horse-power.

Little Toba river, total from the rapids above and below Big creek, estimated 1,600 horse-power.

Falls creek, tributary of the North fork of Toba, from falls in a rapid canyon from near the mouth, estimated 5,000 horse-power.

Owens creek, tributary of North fork, from rapids and falls from near the mouth, estimated 2,000 horse-power.

Thomlinson creek, tributary of South fork, from rapids and falls about half a mile above the mouth, estimated 5,500 horse-power.

Canyon creek, tributary of South fork of Toba, 15 miles above the fork at canyon and falls near the mouth, estimated 17,000 horse-power.

First falls, East fork of Toba river, 31 miles above the forks, estimated 2,000 horse-power.

Second falls, 32 miles above forks, estimated 3,200 horse-power.

Summit creek, tributary of South fork of Toba, 29 miles above forks at rapids near the mouth, estimated 1,000 horse-power.

Tahumming (Graveyard) creek, falls and rapids near the mouth, estimated 1,000 horse-power.

Brem river, north side of Toba inlet, rapids and falls near the mouth, estimated 4,000 horse-power.

Bute inlet, from the following tributaries:—

Salmon river (Orford bay), falls and rapids in box canyon, 4½ miles from the mouth, estimated 4,500 horse-power.

Twenty-two-mile creek, falls near the mouth, estimated 3,000 horse-power.

Homathko river, Waddington canyon, 8 miles below forks, estimated 6,000 horse-power.

East Fork canyon, estimated 6,000 horse-power.

West Fork canyon, estimated 6,000 horse-power.

Ice River rapids and two canyons, estimated 2,500 horse-power.

Eckheinick river, rapids near the mouth, estimated 4,000 horse-power.

Rodell creek, from cascades and rapids 1 mile from the mouth, estimated 3,000 horse-power.

Second West tributary, at falls 800 feet from the mouth, estimated 1,500 horse-power.

Loughborough inlet, from its tributary, Stafford river, from the first, second, third, and fourth rapids, totalling about 1½ miles, estimated 4,000 horse-power.

Knight inlet, from its following tributaries:—

Wawhash creek, from first and second rapids, totalling about 3½ miles, estimated 6,000 horse-power.

Klinaklini river, from rapids and Grand canyon, 15 to 25 miles above the mouth, estimated 15,000 horse-power.

Slide creek, tributary to Klinaklini river, rapids and canyon near the mouth, estimated 3,000 horse-power.

Simm creek, from rapids 2 miles from mouth, estimated 6,500 horse-power.

From Seymour river, tributary to Seymour inlet, at the falls 2½ miles from the mouth, estimated 4,000 horse-power.

East coast of Vancouver island:—

Nanaimo river, from Cassidy canyon to Wellington Collieries bridge, estimated 2,500 horse-power.

From Wellington Collieries bridge to South Fork road bridge, estimated 4,500 horse-power.

South Fork road bridge to Jump creek, estimated 3,000 horse-power.

Jump creek to the storage-dam site, estimated 1,500 horse-power.

Millstone river, near Newcastle, 200 horse-power developed by the Nanaimo Electric Light, Power, and Heat Company.

Little Qualicum river, from Cameron lake to the mouth, estimated 3,500 horse-power.

Qualicum river, at falls and rapids, estimated 1,200 horse-power.

Puntledge or Comox river, development by Canadian Collieries, Limited, site No. 1, ultimate horse-power, 19,000; site No. 2, rapids below site No. 1, 4,000 horse-power.

Campbell river, estimated maximum development, 100,000 horse-power.

Buttle lake and following tributaries:—

Wolfe creek, from fall 1 mile from the mouth, estimated 500 horse-power.

Marble creek, from rapids and falls, estimated 700 horse-power.

Myra creek, rapids near the mouth, estimated 900 horse-power.

Thelwood creek, rapids below lake, estimated 4,000 horse-power.

Ralph river, falls and rapids below lakes, estimated 600 horse-power.

Shepherd creek, tributary to Ralph river, estimated 500 horse-power.

Salmon river, at the canyon 23 miles from the mouth, estimated 1,200 horse-power.

White river, tributary to Salmon river, at the first canyon, 2 miles from the mouth, estimated 5,000 horse-power.

Mememey river, tributary to Salmon river, at canyon, 2 miles from the mouth, 1,300 horse-power.

Koksish river, at canyon from 3 to 6 miles from mouth, estimated 10,000 horse-power.

Nimpkish river, at dam-site, 1½ miles from mouth, estimated 5,500 horse-power.

Camosun creek, 5½ miles above Nimpkish lake, estimated 3,500 horse-power.

Big falls, 2 miles above Woss river, estimated 2,000 horse-power.

One-mile riffle above Davie river, estimated 1,500 horse-power.

Shushart river, at rapids in canyon, estimated 1,200 horse-power.

Klinaklini River and Tatlayoko Lake Section.

As there has been no mining activity in this section during the past year no examination was made of it during 1926, but the section is referred to because in several parts there are indications which promise that deposits of minerals are likely to be found as a result of thorough prospecting. In the past this section of the Nanaimo Mining Division has hardly been scratched over. Some prospecting has been done which resulted in the discovery of gold-bearing quartz veins near the foot of Tatlayoko lake and about 4 miles back in the mountains near Homathko river. Deposits of hæmatite-iron ore occur on Chromium creek, near the head of Klinaklini river.

Descriptions of this section will be found in the Annual Reports for 1910, 1916, and 1920. In the Summary Report for 1925, Part A, G.S.C., there is a useful report by Victor Dolmage under the title of "Tatla-Bella Coola Area Coast District, B.C." The last-named report describes the geology, both general and economic, in much more detail than is done in any of the others referred to.

This section is practically inaccessible from the Coast by direct route, as there are no trails from the heads of Knight and Bute inlets into it, and the country is very rough. This section is, however, easily approached from the interior, because an automobile can be driven from Williams Lake, on the Pacific Great Eastern Railway, to One Eye lake, near the head of Klinaklini river or to the head of Tatlayoko lake, although the section of the last-mentioned road from Red Stone, about 70 miles west of Williams Lake, is not in good condition for auto-travel, but the entire section can be travelled with ease by horseback.

In Dolmage's report he refers to the area mapped as lying along the boundary between the two main physiographic areas of western British Columbia, the rugged mountains of the Coast range on the south-west and the Interior Plateau region on the north-east.

He also calls attention to the fact that between these well-defined areas lies a transitional belt from 10 to 12 miles wide, characterized by round and flat-topped mountains. The boundary between the plateau and the transitional belt passes south of Tatla lake and follows the base of the low hills lying north of One Eye lake. The boundary between the transitional belt and the Coast range is not so well defined. It extends from the north end of Tatlayoko lake, crossing the West Homathko river south of Bluff lake, and continuing north of Perkins peak near the head of Klinaklini river.

In describing the economic geology Dolmage draws attention to the fact that very little mineral has been found, and that the only known deposits in the district are a deposit of auriferous arsenopyrite, situated about 2 miles north of Perkins peak, and a deposit of hæmatite 1 mile south of the peak.

Inlet Section.

This section covers Knight, Bute, Toba, and other inlets and embraces a very considerable area of the Nanaimo Division. It is practically an unknown country, except along the shores of the inlets mentioned and in the near-by mountains. The entire area is covered by the Coast Range batholith, composed almost entirely of quartz diorite, granodiorite, and other related plutonic rocks. The prospecting that has been done near the inlets mentioned has determined that there are several occurrences of belts with lenticular structure composed of altered older sedimentary rocks, which represent roof-pendants. In some of these roof-pendants there occur deposits of copper sulphide and magnetite-iron ores. Some of these on Knight inlet have been prospected to some extent and partially developed, and were described in the Annual Report for 1919, pages 211 to 213.

During the field season of 1926 the writer made a trip with a launch up all of these inlets and visited all of the recorded mineral claims where he could find the owners or some reliable guide to show him the development-work that had been done. During this trip he found that a party of prospectors had been working on the west side of the Klinaklini river, about 10 miles above its confluence with Knight inlet, but was unable to locate any of them, and after referring to the record of mineral claims and assessment-work recorded during the past year in that section, it is noted that there has not been any; therefore it is presumed that the prospectors did not meet with any success.

The *Copper Princess* and *Happy Chance* mineral claims on Knight inlet, near Glendale cove, owned by the Union Copper Company, of Vancouver, are still in good standing, but the work done since these mineral claims were described in the Annual Report for 1919 has not changed the conditions materially; therefore it is unnecessary to repeat the description here.

Copper King. This group is situated on Theodosia river, about 8 miles above the mouth. It is owned by Revenue Investments Company, Limited. The *Copper King* group comprises eleven locations, all Crown-granted. It was located about 1898, and was formerly owned by Colonel McKinnon, of Vancouver, and acquired by the present owners in the late fall of 1925. It covers approximately 550 acres on a steep mountain-side about 4 miles from the present terminus of the logging-railway owned and operated by Merrill & Ring, who own very extensive timber limits in the vicinity. The railway was built to the crossing of the Theodosia river, which at that point is a comparatively small stream flowing between very steep high banks, which in order to be crossed by railway would necessitate a long bridge at a considerable height above the bed of the stream.

The location of the property is rendered easy of access because of the present railway, and will be much easier after the river is spanned by a bridge and the railway-construction continued near to the mountain on which the claims are located.

The ore-deposits occur on the *Copper King* claim and consist of a well-defined body of zinc-blende ore at the contact between limestone and igneous rocks. There is also quite an extensive deposit of magnetite, with which is associated chalcopyrite, the mineralization occurring as a deposit of the contact-metamorphic type between limestone and greenstone, with a great deal of epidote in the greenstone. The magnetite-copper ore occurs about 264 feet in a south-westerly course from the deposit of zinc-blende ore.

Several years ago the deposit of zinc-blende was developed by an open-cut and a crosscut adit 40 feet long, with a winze 8 feet deep below the floor. In the adit the ore is exposed about 10 feet wide. It has a north-westerly strike and dips nearly vertical.

The development-work on the magnetite-copper ore deposit consists of an open-cut 64 feet long, driven in a south-westerly direction, or as a crosscut in which ore is exposed for a length of 52 feet; also a glory-hole near the westerly end of the open-cut about 10 feet deep and 12 feet wide at the surface, all in ore. The distance from the glory-hole to the upper side of the stripping is 37 feet and shows that apparently ore may be continuous across that distance. In the glory-hole the ore is exposed for a length of 30 feet and about 5 feet wide at the bottom, but 12 feet wide at the top.

A general sample from the dump at the mouth of the adit on the zinc-blende deposit assayed: Gold, trace; silver, 2.4 oz. to the ton; copper, 2 per cent.; lead, *nil;* zinc, 17 per cent. Another sample taken from the same adit across 3 feet near the portal assayed: Gold, trace; silver, 2 oz. to the ton; copper, *nil;* lead, *nil;* zinc, 2 per cent. Owing to the condition of the timbers and the winze in the adit it was not possible at the time of the examination to sample a greater width than 3 feet, although apparently the ore-deposit is about 10 feet wide.

A grab sample from the dump of the glory-hole assayed: Gold, trace; silver, trace; copper, *nil;* iron, 55.6 per cent. Another sample from the dump of the glory-hole assayed: Gold, trace; silver, 2 oz. to the ton; copper, 5.7 per cent.; iron, 46.6 per cent. It is only fair to say that there were portions of the ore exposed by the long crosscut and glory-hole from which samples could be selected that would carry more than 20 per cent. copper, but in actual mining practice considerable sorting would have to be done to secure the high-grade copper ore in commercial quantities. Although not included in the samples that were assayed, some specimens of high-grade ore were taken for exhibits in the Government Museum.

Phillips and Frederick Arms Section.

During 1925 there was considerable work done on the *Doratha Morton* and *Alexandria* groups, situated on Phillips and Frederick arms of Cordero channel, but this development was not continued during 1926.

Glasair Mining Corporation.

This corporation, which acquired in 1924 the *Doratha Morton* and about thirty mineral claims adjacent, did work in 1925, but suspended work in 1926. The company is expected to resume operations on the *Enid* and *Julie* groups during 1927. These groups contain the *Enid*, *Stella*, *Julie*, *Jennie B.*, *Daisy*, *Daisy No. 1*, *Daisy No. 2*, *Glasair Fraction*, and *Comox*. The company also owns the *Champion* group, west of the *Doratha Morton*, which contains the *Champion*, *Commonwealth*, *Clear McCoy*, *Commonwealth No. 2*, *Glasiar No. 2*, and *African;* as well as the *Monte Christo* group, containing the *Monte Christo Fraction*, *Monte Christo No. 1*, *Monte Christo No. 2*, *Monte Christo No. 3*, and *Monte Christo No. 4;* and the *Riverside* group, containing the *Amy*, *Lorie*, and *Isis* mineral claims, the last-named group being on the east side of Phillips arm.

Alexandria.

This group of Crown-granted claims, consisting of the *Alexandria*, *Highland Laddie*, *Duke*, *Emperor*, *Jubilee*, and *Duchess*, extends up the mountain from Picton point at the entrance to Phillips arm to the summit of the Pembroke mountain range, where the north-westerly boundary of the *Duchess* adjoins the easterly boundary of the *Julie*, one of the properties owned by the Glasair Mining Corporation.

The development-work commenced during 1925 was suspended during 1926 after the organization of the Alexandria Mines Company, Limited, had been perfected, but it is stated that the work will be resumed at an early date during 1927.

Constitution.

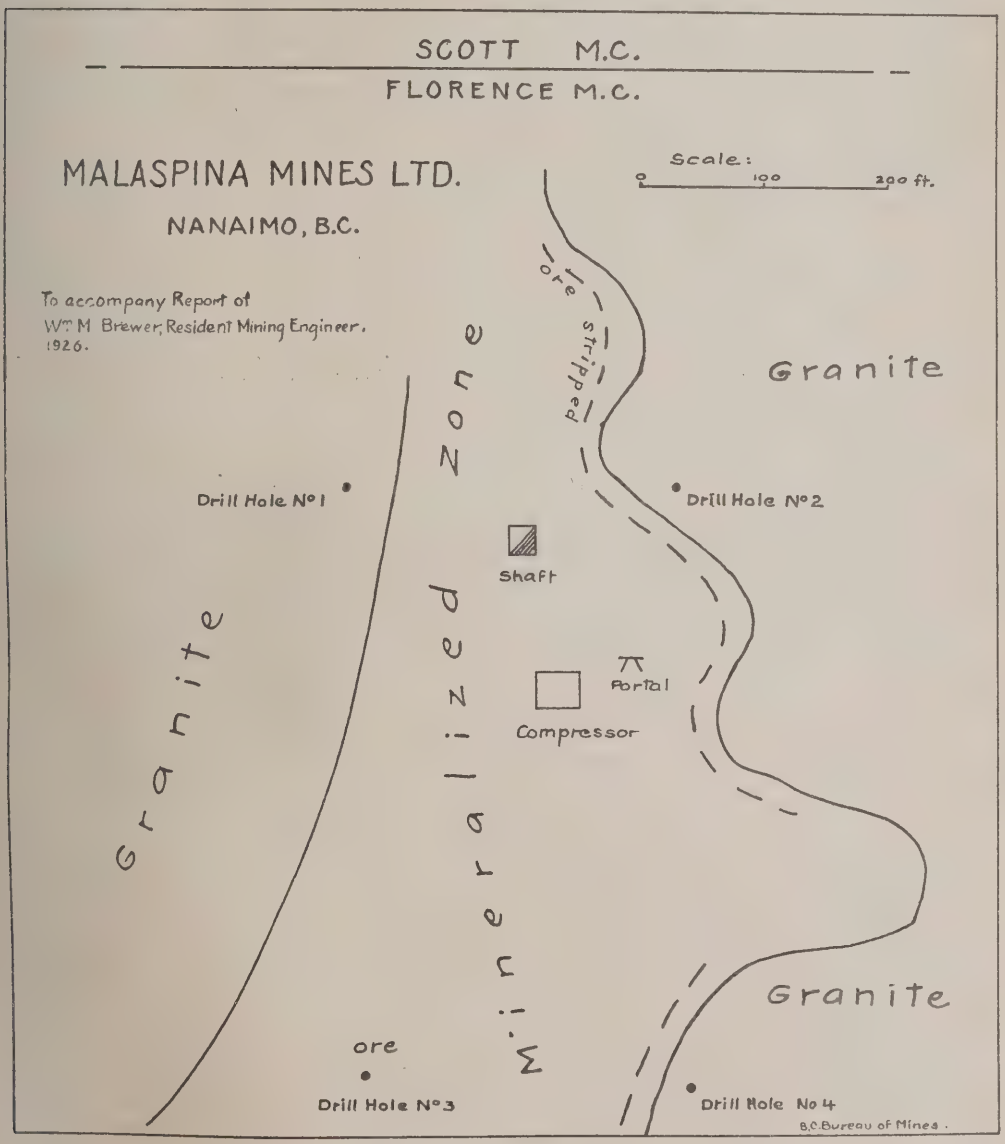
The only other prospecting-work that has been done in this section during 1926 has been on the *Constitution* claim on the northern end of Upper Thurlow island. Davie Cox, the owner, has been continuing the prospecting-work described in the Annual Report for 1925, but there has been very little change in the conditions as described in that report.

Malaspina Peninsula Section.

The Malaspina Peninsula section embraces the territory between Jervis inlet and Sarah point at the northerly end of Malaspina peninsula, along the coast-line of Malaspina strait, and including the interior portion of the Mainland tributary to Powell lake. In the Annual Report for 1925 this section was entitled the "Powell River" section, but for the reason that at present

the only active operations being carried on are near the south-westerly shore-line of the Malaspina peninsula, south-easterly from Lund Post-office, the title of the section is changed to the above.

Those portions of the section from the westerly side of Jervis inlet to Powell lake, including the latter, have been visited by a few prospectors who reside near Powell River, and several samples of ore from outcroppings that have been found in the vicinity of Cranberry lake, about 3 or 4 miles easterly from Powell river, have been assayed, but showed such small values that work started was not continued.



Malaspina Mines, Ltd.

During 1926 two examinations were made of this company's property. The first examination was made in February, 1926, which was described in the Annual Report for 1925, with which is incorporated a sketch-map showing the locations of the mineral claims that made up the groups acquired by the company, with the geology as sketched by Victor Dolmage, of the Canada Geological Survey. The second examination was made in August, 1926.

Soon after the last examination was made Colonel J. E. Leckie resigned from the management, and W. G. Dickenson, the vendor of the *Florence* claim to the Malaspina Mines, Limited, was appointed manager. Since then any work that has been carried on has been under contract instead of by day-labour, as was the custom under the old management.

Other changes made have been the relinquishment of the options held on the *Royal Arch* and *John Bull* groups to the original owner, William Uzzell, the former of which adjoins the *Florence* group on the south-east boundary. At the present time the property owned by the company is represented by the *Florence*, *Maple*, *Cypress*, and *Scott* claims, with all the development-work that has so far been done located on the *Florence*.

During 1926 several hundred feet of diamond-drilling was done, as well as open-cut work and some crosscut adits driven in order to determine the extent of the ore-deposits on the *Florence* claim. Previous to the abandonment of the options on the *Royal Arch* and *John Bull* groups, about 200 feet of open-cut work was done and a shaft about 30 feet deep sunk on the *John Bull* claim. Sufficient development has not been done to enable an engineer to measure up the tonnage of actual ore in sight on the *Florence* claim, but all the indications warrant the favourable opinion expressed in the report published in 1925.

John Bull and Royal Arch.

These two groups are owned by William Uzzell (post-office address, Powell River). The *John Bull* was described in the Annual Reports for 1922, 1924, and 1925. The *Royal Arch* was fully described in the Annual Report for 1924. It is therefore unnecessary to make any lengthy reference in this present report, except so far as new work is concerned and to repeat the assay results obtained from samples taken at the time of earlier examinations.

New development has been done on the *John Bull* and consists of an open-cut 150 feet long, from 10 feet deep near the entrance to 20 feet deep at the face, driven in a north-westerly direction to the south-westerly side of an igneous dyke which is a prominent feature and appears to be intrusive into the limestone country-rock, and also through the ore-body as ore occurs on both sides of the dyke, which strikes in a north-westerly direction.

On the north-easterly side of the dyke an old shaft known as the No. 1 was sunk some years ago, but when the *John Bull* was examined at earlier visits it was full of water, and at the time of a recent examination could not be examined for the same reason. Another shaft has also been sunk on the *John Bull* to a depth of 31 feet, but as no work was being done at the time (February 27th, 1927) the water in it prevented an examination.

On the *Royal Arch* mineral claim there has not been any new work of any importance done since it was examined and reported on in 1924.

Samples and Assays.

Location.	Gold.	Silver.	Copper.	Lead.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.	Per Cent.
1. John Bull, 1922	Trace	4.4	0.8	.....	10.0
2. John Bull, 1922	Trace	Trace	.....	.....	17.5
3. John Bull, 1922	0.02	0.2	0.2	.....	31.0
4. John Bull, 1922	Trace	1.2	.....	2.0	1.6
5. John Bull, 1924	Trace	Trace	.....	.....	11.0
6. John Bull, 1924	0.7	0.5	Trace	.....	Trace
7. John Bull, 1926	Trace	0.2	.....	.....	30.0
8. John Bull, 1926	0.04	0.4	.....	.....	40.0
9. John Bull, 1926	.....	.....	.....	.....	52.0
10. Royal Arch, 1924	.....	.....	0.1	.....	17.5
11. Royal Arch, 1924	Trace	2.2	6.9	.....	5.5
12. Royal Arch, 1924	Trace	2.0	6.9	.....	6.0

Islands Section.

The Islands section of the Nanaimo Division embraces all of the islands between the Mainland and the east coast of Vancouver island, but there are only a few of these on which there occur any deposits of mineral, and these are Thurlow, Cracroft, Quadra, Redonda, Texada, Lasqueti, and Jervis islands.

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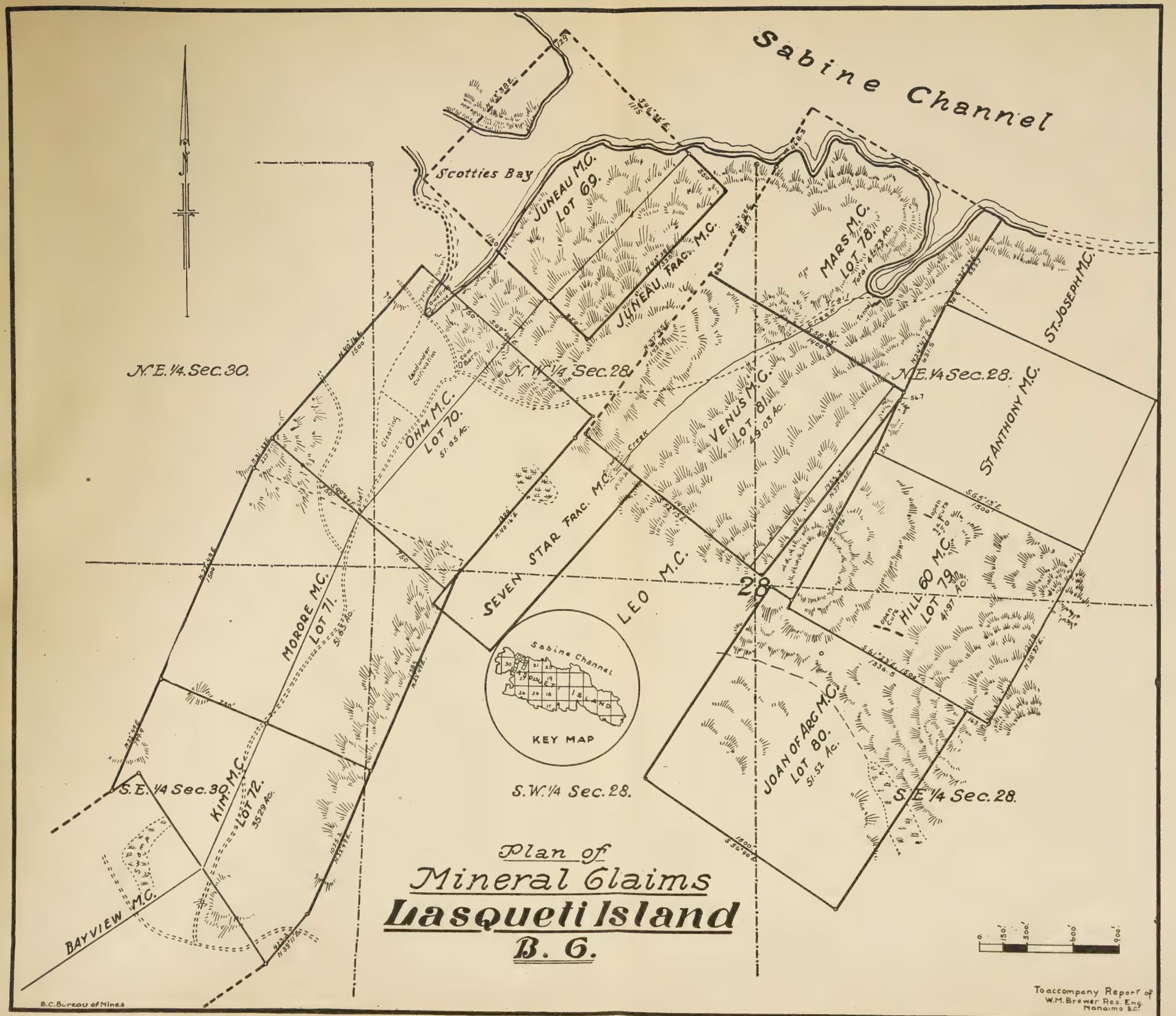

Sabine Channel
Scotties Bay
JUNEAU M.C. LOT 69.
JUNEAU FRAC. M.C.
MARS M.C. LOT 78. Total 4-1/4 Ac.
ST. JOSEPH M.C.
N.E. 1/4 Sec. 30.
N.W. 1/4 Sec. 28.
N.E. 1/4 Sec. 28.
OHM M.C. LOT 70. 51.65 Ac.
VENUS M.C. LOT 81. 49.03 Ac.
ST. ANTHONY M.C.
SEVEN STAR FRAC. M.C.
LEO M.C.
MORORE M.C. LOT 71. 51.65 Ac.
HILL 60 M.C. LOT 79. 41.97 Ac.
JOAN OF ARC M.C. LOT 80. 51.52 Ac.
KIM M.C. LOT 72. 35.29 Ac.
BAYVIEW M.C.
S.E. 1/4 Sec. 30.
S.W. 1/4 Sec. 28.
S.E. 1/4 Sec. 28.
KEY MAP
Sabine Channel
ISLAND
Plan of
Mineral Claims
Lasqueti Island
B. C.
0 150' 300' 600' 900'
B.C. Bureau of Mines
To accompany Report of
W.M. Brewer Res. Eng.
Nanaimo B.C.

Thurlow Island.—Although Thurlow island is generally referred to as only one, there are really two islands separated by Mayne passage and should be referred to as East and West Thurlow islands. On the East island, Shoal Bay was the distributing centre years ago for the mining and logging camps operating on the Mainland as well as on several of the other islands near Thurlow. At that time the *Doratha Morton*, *Alexandria*, *Monte Christo*, and *Douglas Pine* mines were being operated.

During recent years, although the post-office for a large district is still maintained at Shoal Bay, the old name, or Thurlow, its present name, there has not been any mining activity since the closing-down of the *Douglas Pine* mine, located on the island about twenty years ago, except a little flutter about 1919, when the Ladysmith Smelting Corporation was doing some development-work on the *Dawn* claim, which was later suspended and has not since been resumed.

Cracroft Island.—This island is situated near the entrance of Knight inlet, with its southerly coast-line bordering on Johnstone strait. It is one of the largest of the several islands. On it there is a splendidly sheltered harbour with good anchorage named Port Harvey, at which there is a good store kept by an old-timer named Bennett.

Venture. This claim is located on Boat harbour, Forward passage, on the southerly coast of Cracroft island, about 7 or 8 miles westerly from Port Harvey. It was staked several years ago and an adit was driven by the Cracroft Copper Mining Company about ten years ago after that corporation had acquired the property from the Fife Bros., of Port Neville.

Owing to the caved condition of the tunnel it was not examined, but on the dump there was a considerable tonnage of country-rock as well as a small tonnage of ore that had evidently been sorted for shipment. Two samples were taken from the sorted ore; one of which assayed: Gold, trace; silver, trace; copper, trace; and the other: Gold, trace; silver, trace; copper, 0.5 per cent. These low values are accounted for by the fact that, judging from all the material on the dump, no quantity of really solid ore was found to occur in the tunnel, which had evidently been driven in a sheared country-rock resembling quartz porphyry, in which the shearing-planes were filled with thin streaks or stringers of chalcocite, with which was associated considerable epidote.

The *Venture* claim was restaked by H. E. Rines on May 31st, 1926, but when examined on August 2nd last no new work was found.

Quadra Island.—Quadra island is the southernmost of the Valdes archipelago, which is made up of Sonora on the north, Maurella on the east, and Quadra, the largest and most southerly.

About twenty years ago there was considerable excitement relative to the mineral-deposits on this island. A comparatively large tonnage of ore was obtained from the *Lucky Jim* claim near Granite bay on the north-westerly coast; also from the *Copper Mountain* group at the head of Gowlland harbour on the south-westerly coast, and from the *Copper Cliff* on the westerly coast, about 4 miles below Seymour narrows. Shipments were made intermittently from one or the other of these groups until about 1920. Since that time only assessment-work has been done.

During the latter end of July, 1926, and beginning of August several of the mineral claims on the island where work had been recently done were examined.

Lucky Jim. This property was described in the Annual Reports for 1908 and 1910. It is located about 3 miles south-easterly from Granite bay and has not been actively operated for about ten years, but previous to that time had a record as a shipper of a considerable tonnage of ore which contained gold tellurides, and is said to have yielded about $75 to the ton at the Tyee Company's smelter at Ladysmith.

This group comprises the *Lucky Jim*, *Rising Sun*, *Saxon*, and *Standard* claims. From 1908 to 1910 ore was shipped to the Tyee smelter. The mine was under bond to George D. Munford, of New York. It was closed down about 1911 and has not been operated since. In 1925 a forest fire swept over the island and destroyed all of the mine camp buildings, the gallows-frame over the shaft, and ruined the machinery, consisting of an air-compressor, pump, blacksmith-tools, etc. The property has been recently acquired by R. Crowe-Swords, of Vancouver, and associates, who propose to reopen it during the early spring of 1927 and expect to again place it in the ranks of shippers.

Plato. This claim is owned by J. M. Law, of Hyacinth Bay (post-office address, Heriot Bay). It adjoins the *Lucky Jim* group and was prospected considerably before the war, when it was first staked, but since then the work has

been confined only to the annual assessment-work. The showing consists of a well-defined quartz vein varying in width from 2 to 18 inches, heavily mineralized, chiefly with iron pyrite. The strike of the vein is N. 20° W. (mag.) and the dip 80°. The vein is a fissure in andesite country-rock and can be traced for about 350 feet along the strike by several trenches and open-cuts. It is possible that the continuity is maintained definitely for that distance, but this has not been actually proven.

The development-work consists of two shafts in addition to considerable open-cutting, trenching, and stripping. The depths of the shafts are undetermined, because in the No. 1 water was up to about 10 feet of the surface, and the No. 2 shaft, located about 60 feet north-westerly from the No. 1, was full of water, so that neither of them could be thoroughly examined. Samples were taken from the No. 1 shaft by means of a platform that had been constructed at about 8 feet below the surface. Four samples were taken during the examination, as follows:—

No. 1, across 12 inches from the side of the No. 1 shaft 8 feet below the surface, assayed: Gold, 1.50 oz.; silver, 0.30 oz. to the ton; copper, *nil;* zinc, 1 per cent.

No. 2 sample, taken up the vein exposed in the shaft from near the platform to the surface across varying widths, from 2 to 18 inches, assayed: Gold, 0.54 oz.; silver, 0.1 oz. to the ton; copper, *nil;* zinc, trace.

No. 3 sample, taken across 12 inches at the surface at the collar of the No. 1 shaft, assayed: Gold, 27 oz.; silver, 3 oz. to the ton; copper, *nil;* zinc, *nil.*

No. 4 sample, taken across an outcrop 7 feet wide about 350 feet north-westerly from the No. 1 shaft, assayed: Gold, trace; silver, trace; copper, *nil;* zinc, *nil.*

Wyho. This mineral claim is about 1 mile easterly from the head of Deep Water bay, on the westerly coast of Quadra island, and about 6½ miles nearly due south from Granite bay. It was formerly known as the *Wanderer* claim, owned by Albert Ross and Edward Hamilton, of Granite Bay, and was fully described in the Annual Reports for 1920, 1921, and 1922. During 1925 the claim was restaked under the name of *Whyo* and acquired by Albert Ross, one of the original owners. It was examined on July 26th last, but as there was very little change in the conditions since the former examinations and reports it is not necessary to make further reference in this present report.

Gowlland Harbour.

During 1926 there has been no activity on any of the mineral claims in the vicinity of Gowlland harbour, at the southerly end of Quadra island, nor on the *Copper Cliff* group on the westerly coast.

As the mineral claims on this part of Quadra island were fully described in the Annual Reports for 1916, 1918, and 1919, since which time they have all been idle, it is not deemed necessary to repeat the descriptions in this report.

Near Bold point, on the easterly side of the island, the *Santa Anna* group is located, which was fully described in the Annual Reports for 1916 and 1919.

Redonda Island.

This island is bounded on the north by Pryce channel, on the west by Lewis channel, on the east by Waddington channel, and on the south by Desolation sound, and is situated in an easterly direction from Quadra island.

The only mining activity on this island during 1926 has been quarrying limestone from a large quarry on the shore of Pryce channel, a short distance easterly from the magnetite-deposits owned by the Redonda Iron-Copper Company, Limited, of Vancouver, which were fully described in the Annual Report for 1919. The limestone quarried on Redonda island is used in the Whalen pulp and paper mills.

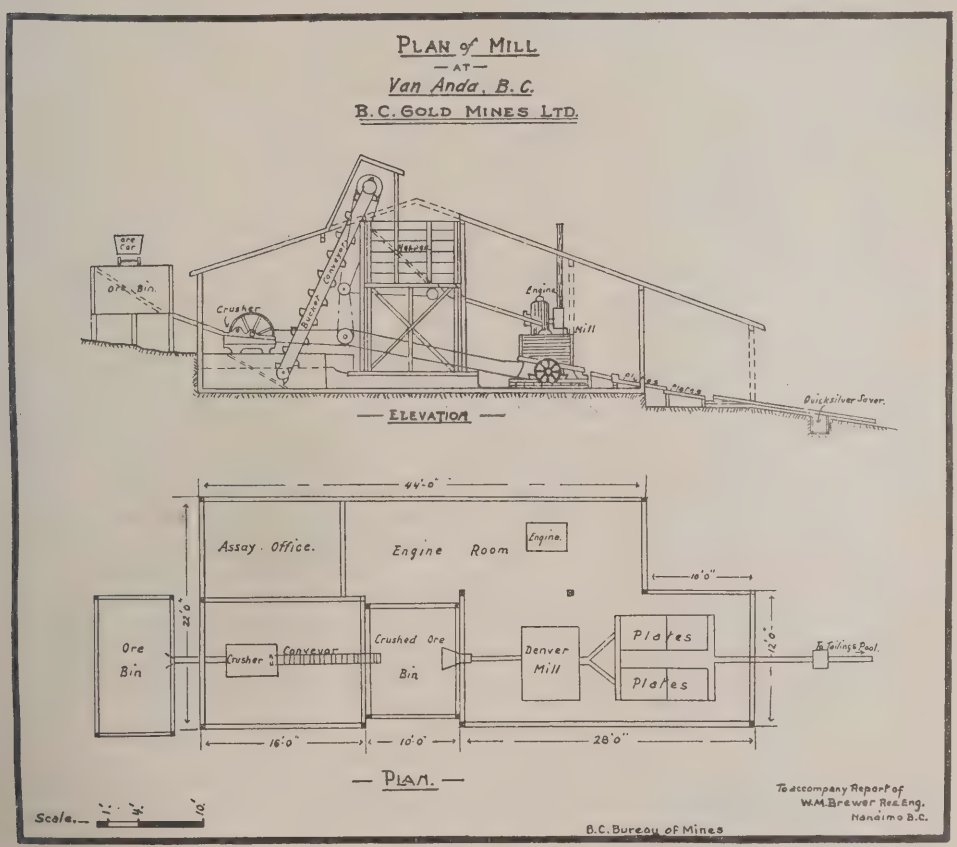
Texada Island.

This island and the mines on it have been fully described in nearly every Annual Report since 1916, when a very full description of the iron-ore deposits on the west side of the island was published. These deposits were recently examined by G. A. Young and W. L. Uglow, of the Geological Survey of Canada, in 1922, 1923, and 1924, and were fully reported on in a memoir entitled "Economic Geology Series No. 3," "Iron Ores of Canada, Volume 1, British Columbia and Yukon," by G. A. Young and W. L. Uglow.

Lode-mining on Texada island during 1926 has been represented by the operations on two properties—one known as the *Gem*, owned and operated by the British Columbia Gold Mines, Limited, of Vancouver; and the other, the *Marjoric* group, owned and operated by the Chickamin Gold Mines, Limited, of Victoria.

Gem.

This property, owned by the British Columbia Gold Mines, Limited, is described in the Annual Reports for 1924 and 1925. Between February and June, 1926, most of the work consisted of constructing a building for the mill-house, including an assay office and living-rooms for the superintendent, arranging equipment for handling the ore from the shaft to the crusher-floor of the mill, continuing the drift on the 100-foot level, and sinking from the 100-foot level to the 150-foot level of the new shaft. The underground workings could not be examined in June owing to water in the shaft.



A visit was again made in August, with the expectation of finding the mine and mill in active operation, but work in the mine was closed down until the installation of a new crusher for the mill was completed.

The visit on December 4th, 1926, also proved to be a disappointment, because owing to recent heavy rains a very considerable and extra quantity of water had flooded the mine, for the reason that the pumping capacity was not sufficient to control it, and the superintendent was absent in Vancouver making arrangements for an extra pump.

The visit in February, 1927, proved equally disappointing, because all operations had ceased and the property was in the hands of a caretaker and the water had risen to about the 50-foot level in the shaft. While an examination of the underground workings was, however, impossible at that time, the writer was able to examine the surface showing of the vein that had been reported as being 14 feet wide on the surface and carrying good values.

The tailings-dump would indicate that about 200 tons of ore had been milled all told, and a sample was taken from shallow trenches, which, while it could not be claimed to represent an absolute average, yet was fairly representative of the dump. This sample assayed: Gold, 0.70 oz. to the ton; silver, 0.1 oz. to the ton.

A shaft sunk in the so-called 14-foot vein could not be sampled owing to water. This vein is apparently a cross-vein in a sheared porphyrite country-rock and outcrops on the surface about 125 feet westerly from the main vein. The strike is north (mag.), while the strike of the vein that has been drifted on underground is almost east (mag.). While it is claimed that the surface outcropping yielded good values in gold across 14 feet, yet it is noticeable that near the surface, in the sides of the pit that was sunk to connect with the drift on the 50-foot level from the main shaft, about 12 feet out of the 14 is made up of rotten decomposed oxidized country-rock, while the quartz vein itself is only about 2 feet wide.

When the mine was closed down about December 1st after it had been examined by Dr. Schofield, the writer is informed that the drift on the 50-foot level in the main workings was being extended westerly for the purpose of intersecting the cross-vein. Because of the water in the mine it was not possible to examine this drift, nor could any information be gathered relative to the conditions underground, for the reason that the superintendent and all men who had worked below were absent from the property.

Marjorie. This group, on which no work had been done for several years, was acquired during the late fall by R. F. Castle, of Victoria, who organized the Chickamin Mines, Limited, and started mining about November last. The problem on the *Marjorie* group was to determine the condition on the 100-foot level from the main shaft of eight fissure-veins that outcrop on the surface and have their lines of strike practically parallel to each other. This work was being done when the property was examined on December 4th, 1926, and also on February 21st, 1927.

On the last-named date the No. 8 vein had been intersected by the crosscut adit and the management proposed to drift about 125 feet along the vein, which drift would be under an open-cut on the surface, about the same length, in which the vein was exposed the entire distance and from which several tons of surface ore had been mined and milled a few years back. The examination showed that the condition of the property was such that the future depended entirely upon the results that would be obtained from the proposed drift.

Marble Bay. Since 1921 the Marble Bay mine, owned by the Tacoma Steel Company, has been idle, but during the past summer it has been rumoured that there was a possibility of the old mine being reopened under new management, which rumour, however, has not yet been verified. The Tacoma Steel Company, though, has sold the limestone-quarries which border on Sturt (Marble) bay to the Powell River Company, on which is kept a small gang of miners working steadily. About 6,000 tons of lime-rock was mined during 1926 and a larger output is planned for 1927. This limestone is used at the Powell River plant on the Mainland, about 8 miles by water from the quarry.

Loyal Co. During the past year all technical and legal points with regard to the titles of the various mineral claims and Crown-granted land lots owned by the old Vananda Copper-Gold Company have been settled, and under a sale by the debenture-holders the property was acquired by the Loyal Company, an old company incorporated under the laws of the State of Washington.

There was a rumour during the fall, after the sale had been completed, that the mine would again be actively operated either by the Loyal Company or by purchasers of the property from that company, but up to the time of writing this report negotiations had not been closed.

Pacific Lime Co. This company, which operates limestone-quarries bordering on Blubber bay, at the north-west end of Texada island, has been working continuously for several years past, and during 1926 produced approximately 200,000 barrels of quicklime in addition to several hundred tons of broken lime-rock which was shipped to the Granby Mining, Smelting, and Power Company, to be used as a flux in its copper-smelter at Anyox.

Some idea of the extent of the quarries being worked by this company can be gleaned from the fact that there are two quarries, known as No. 1 and No. 2. The floor of the No. 1 is approximately 400 by 200 feet in area, with the face around half of the quarry 75 feet deep and around the remainder 40 feet deep. The No. 2 quarry is 80 feet southerly from the No. 1 and the dimensions of this is 150 by 100 feet, with a face 40 feet deep.

Between these two quarries there is an intrusive dyke of igneous rock, through which an adit has been driven connecting the two quarries and is being continued 100 feet beyond the south wall of the No. 2 quarry. From this level a raise will be made in limestone to the surface, about 75 feet above the floor of the adit.

The Pacific Lime Company, at its works at Blubber bay, is perfectly self-contained, because, in addition to quarrying limestone, manufacturing hydrated lime for domestic and export trade, and shipping lime-rock, the company has its own sawmill, manufactures its own barrels, generates the electricity for the entire plant, furnishes employment the year round for approximately 200 men, and has been in continuous operation for about twenty years. The head office of this company is in the Pacific Building, Vancouver.

Stromberg.

This group was described in the Annual Report for 1925. The owners, William Stromberg, of Vananda, and associates, have done further prospecting-work on the group during 1926. This work was on outcroppings occurring on the *Delora* and *Kate* claims of the group, which contains in addition the *Edith*, *Hill*, *Ethel*, *Bullion*, and *Big Bluff* claims. The showings occupy a contact-metamorphic zone between limestone and porphyrite, in which occur intrusive dykes that, on the *Kate* and *Delora* claims, apparently have a decided influence with regard to the mineralization of the contact-zone.

These diorite dykes apparently strike almost parallel to the ore-zone, which is apparently about 500 feet wide, and where it has been prospected on the *Edith*, *Kate*, *Delora*, *Ethel*, and *Bullion* claims apparently maintains its continuity. For the reason that the *Hill* and *Big Bluff* claims have not yet been prospected the continuity throughout the entire group is not proven, but as the *Hill* is situated between the *Delora* and *Ethel* the continuity of the zone may be taken for granted, though it has not been determined, because the contact between the limestone and porphyrite is apparently persistent across that claim. The *Big Bluff* claim is at the extreme northerly end of the group, but not having yet been prospected, no data of importance are obtainable.

Previous to 1926 the prospecting and developing work on the group was confined to the *Edith*, *Ethel*, and *Bullion* claims. Starting from the cabin on the shore-line on the *Edith* mineral claim, there is a good trail across a portion of the *Kate* and on to the *Delora* claim, which was followed at the time of the examination to a point about 1,000 feet from the No. 1 post on the *Delora* in a north-westerly direction, where at a point about 300 feet from the location-line the surface had been stripped for a length of 30 feet along the strike of a well-defined fissure filled with quartz between 15 and 18 inches wide in a sheared zone in porphyrite; the strike of the fissure is N. 30° E., but the strike of the shearing-planes is N. 40° W.

In this quartz vein there was considerable epidote, with the mineralization chiefly bornite scattered sparingly through the quartz. The sheared country-rock was stripped for about 55 feet along the strike in a north-westerly direction by 12 feet wide. About 40 feet distant on the north-easterly side of the stripping mentioned an area 10 feet long by 3 feet wide has been stripped along a ridge from 10 to 15 feet higher than the surrounding country. In an easterly direction 90 feet from the last stripping mentioned there is an open-cut 20 feet long by 8 feet wide. The ridge mentioned was followed in a south-easterly direction from the stripping for about 100 feet, where there is open-cut work about 50 feet long and from 10 to 12 feet wide in the same general character of rock and mineralized with grains of bornite disseminated through it.

Beyond this in a south-easterly direction there are two open-cuts—one 18 feet long, the other 40 feet—to a diorite dyke, apparently an intrusive into the mineralized zone, because mineralization of sparingly disseminated bornite associated with chalcopyrite shows on both sides of the dyke, which is about 20 feet long by 15 feet wide, in which also occurs similar mineralization. The dyke can be traced across a small unnamed creek about 150 feet in a N. 10° E. (mag.) direction from the last-mentioned open-cut, and there are also good indications of mineralization along the sides of the dyke in both the banks of the creek, which are very steep and are quite difficult to prospect owing to underbrush and fallen timber.

From the southerly boundary of the *Delora* claim the trail crosses on to the *Kate* claim in a south-westerly direction to a shaft said to be 50 feet deep, with a drift 45 feet long, but owing to water in the shaft this work could not be examined. From this work the trail continues on to a prominent bluff which overlooks the sea-shore and rises about 100 feet above the water-level at a very steep angle.

On this bluff there are several open-cuts, a shaft 17 feet deep full of water, with an open-cut 120 feet long and 8 feet deep, which leads to the shaft mentioned. This work, however, could not be examined owing to the walls being caved and the shaft being full of water. The conditions on the bluff with regard to the structure of the rock formation relative to strikes and dips are complicated and no really reliable opinion could be formed unless diamond-drilling was done.

The country-rock has the appearance of a very basic igneous rock with porphyritic structure, very much sheared and a large proportion of it mineralized with grains of bornite and chalcopyrite associated with much epidote. There are also many narrow veinlets of calcite, and at the 17-foot shaft mentioned there is a quartz vein between 2 and 3 feet wide exposed along the floor of the open-cut which leads to the shaft.

There are many prospecting-holes which appear to have been sunk at haphazard and are irregular in size, and usually shallow in depth, scattered over the summit of the bluff, which is about 100 feet above sea-level and slopes gently upwards from the summit towards the surrounding country.

In the following table of assays from the *Stromberg* group Nos. 1 to 8 were taken during the examination, samples Nos. 9 to 12 were sent in by William Stromberg, December, 1926, and Nos. 13 to 16 are reprinted from the 1925 Annual Report:—

Location.	Gold.	Silver.	Copper.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.
1. Delora	.....	.....	1.0	1.0
2. Delora	.....	.....	1.5	1.0
3. Delora	.....	.....	0.6	1.5
4. Delora	.....	.....	0.5	2.0
5. Delora	.....	.....	2.0	3.0
6. Delora	.....	.....	0.4	1.0
7. Kate	.....	.....	1.0	2.0
8. Kate	.....	.....	1.0	1.0
9. Delora	Trace	2.0	.....	Trace
10. Delora	Trace	0.6	2.5	Trace
11. Delora	Trace	Trace	2.5	Trace
12. Delora	Trace	0.8	7.0	.....
13. Bullion	Trace	Trace	3.3	.....
14. Bullion	Trace	Trace	3.0	.....
15. Bullion	Trace	1.0	7.1	.....
16. Edith	Trace	0.6	8.7	.....

Comox Limestone and Fertilizer Co.

During 1926 there has been quite a movement in acquiring limestone-deposits on Texada island since the Powell River Company purchased the quarry on Sturt (Marble) bay from the Tacoma Steel Company about 1922. First, Messrs. Fry and Planta acquired a deposit at the head of the lagoon about a mile from Sturt bay, on which quarrying would have been in operation during last autumn but for a hitch in securing a right-of-way across a part of the Tacoma Steel Company's property to the water-front. Mr. Fry was the first local manager of the Pacific Lime Company at Blubber bay, from which position he resigned some years ago, and Mr. Planta is one of the pioneer prospectors and all-round mining men who settled on the island about thirty years ago.

The latest movement has been made by the Comox Limestone and Fertilizer Company, which has acquired a deposit of limestone on the west coast of Texada island near Davies bay and proposes to quarry the stone for shipment to a crushing plant erected at Courtenay, and has found a good market for crushed rock amongst the farmers in the Comox valley, who use it for soil dressing.

Lasqueti Island.

This island is situated between the southerly end of Texada island and the east coast of Vancouver island. The mineral-deposits so far discovered have been confined to the westerly end of the island and occupy a restricted area, every part of which is of easy access from Scotties bay, which affords splendid shelter and anchorage regardless of the weather outside.

The mineralization is almost exclusively chalcocite, with which usually is associated some bornite and chalcopyrite. The gangue is generally quartz, sometimes with garnet and crushed

country-rock. The prevailing country-rock in which the mineralization occurs is quartz diorite. Several mineral claims within the boundaries of the mineralized zone on this island were described in the Annual Reports for 1920 and 1922.

Juneau.

This group consists of *Juneau*, *Juneau Fraction*, *Ohm*, *Morore*, *Kim*, and *Bayview* claims, all Crown-granted. The group is owned by the Kurtzhals Bros., residents on the island. In a general way three mineralized zones can be traced across part of the island. The easterly one is developed on the *St. Joseph* and *St. Anthony* claims; the centre one on the *Mars*, *Venus*, and *Leo* claims; and the third or westerly one extending through from the *Juneau Fraction* to the *Bayview*. This description of the *Juneau* group is a report on the westerly zone, with a description of the several mine-workings, giving the assay values from samples taken from these workings.

This section of the island is an ideal one to travel over, as the summit between Scotties bay and False bay only reaches an altitude of about 300 feet. It is also an ideal section on which to carry on mining operations, because deep-water transportation from Scotties bay or False bay is easily accessible. Good trails and fairly good roads are conveniently situated, so that all of the mine-workings and prospect-holes can be reached easily. The main camp on this part of the island is on the *Mars* mineral claim, one of the *Venus* group, at the head of the lagoon, close to the portal of the main tunnel that was driven when mining operations were being carried on by the Lasqueti Mining Company, Limited, during 1920 and 1921.

On the *Juneau Fraction* ground there are several shafts, the deepest being about 21 feet, which was full of water. In this shaft a vein is said to be 2½ feet wide, mineralized with chalcocite, bornite, and chalcopyrite in a gangue made up chiefly of quartz. A general sample taken from the dump assayed: Gold, 0.7 oz.; silver, 2 oz. to the ton; copper, 15.5 per cent.; zinc, 3 per cent. Generally speaking, the above sample may be said to be a fair representative of the ore exposed in some of the other holes in the vicinity, and checks closely with a sample taken from one of these holes during an examination in April last, which assayed: Gold, 0.7 oz.; silver, 1.2 oz. to the ton; copper, 19.6 per cent. Another sample taken from a prospect-hole known as No. 3 during the April examination assayed: Gold, trace; silver, trace; copper, 4.5 per cent.

Near the line dividing the *Ohm* from the *Morore* claim a shaft has been sunk on a quartz vein; the depth of the shaft is undetermined and as it was full of water could not be examined, but along the apparent strike of the quartz vein about 30 feet from the shaft an open-cut has been made about 30 feet long, 5 feet deep at the face, in which is exposed apparently an extension of the quartz vein on which the shaft was sunk. A sample taken across 12 inches in the face of the open-cut assayed: Gold, *nil;* silver, *nil;* copper, 1 per cent.; zinc, 2 per cent.

The development on the *Morore* claim is located about 400 feet easterly from the trail in a ridge made up of quartz diorite, and consists of a shaft 10 feet deep, full of water, but with an oxidized vein-filler showing in the wall about 2 feet wide, with a solid quartz vein about 6 inches wide separated from the oxidized material by about 3 feet of country-rock. No sample was taken from this work owing to the water in the shaft and no windlass or bucket to unwater it.

Other work on this claim is an adit driven in the quartz diorite about 100 feet long. This adit was driven S. 10° E. for about 50 feet, but from there to the face it is very crooked, and very little ore was exposed beyond a point about 40 feet from the portal, where a winze was sunk 8 feet deep on the left side of the adit in a lens of ore. Water in the winze prevented any examination; consequently no samples were taken from this.

About 200 feet inside of the *Kim* boundary there is a shaft said to be 24 feet deep which was close-timbered and full of water; consequently no examination was made, but a sample was taken from a small dump of ore near the collar of the shaft, which assayed: Gold, *nil;* silver, *nil;* copper, 2 per cent.; zinc, 2 per cent. This shaft is known as the No. 1 *Kim* shaft.

Another shaft, known as the No. 2, is said to be 26 feet deep and appears to have been sunk on a lens of ore lying *en eschelon* to that on which the No. 1 shaft was sunk and about 70 feet to the south-east. A grab sample from the dump of this shaft, in which a vein about 18 inches wide is exposed close to the collar of the shaft and representing a general sample, assayed: Gold, trace; silver, 0.4 oz. to the ton; copper, 7.8 per cent.; zinc, 1 per cent.

About 60 feet southerly from this shaft there is an open-cut 20 feet long, 8 feet deep at the face, in which a vein 6 inches wide made up chiefly of solid sulphides is exposed. No sample was taken from this showing.

From this work on the *Kim* the trail was travelled on to the *Bayview* mineral claim to the summit of a ridge of quartz diorite that extends from near the head of Scotties bay across the island to False bay. On this claim there is a shaft 10 feet deep on the westerly side of the wagon-road, in which is exposed a vein which strikes north (mag.) in quartz-diorite country-rock and shows mineralization of some chalcopyrite associated with some molybdenite.

The vein-filler at this occurrence is about 5 feet wide, with considerably oxidized rock in the centre, apparently resulting from the oxidation of iron pyrites. The gangue is chiefly quartz which fills gashes in the country-rock and is frozen to it.

Venus. Messrs. Batten and associates, of Victoria, reopened the underground mine-workings on the *Mars* and *Venus* claims and extended the prospecting with a view of renewing active operations from the point where the work was suspended in 1921. The old workings were not examined, nor was any sampling done except the following: Returning from the *Bayview* claim back to the camp across a part of the *Mars*, a sample was taken from the dump of a shaft about 15 feet deep, dimensions 12 by 8 feet, near where the sample was taken from the *Juneau Fraction*. This sample assayed: Gold, 0.4 oz.; silver, 0.4 oz. to the ton; copper, 4.5 per cent.; zinc, 3 per cent.

Jervis Island.

Jervis is a small island lying about 2 miles easterly from Lasqueti island in Sabine channel. The area of Jervis island is approximately 200 acres, Crown-granted as to the surface, and practically the entire island is covered by four Crown-granted mineral claims, known as the *Lady Helen*, *Sir Chet*, *Sir Ned*, and *Lady Evelyn*. The mineral claims were located on September 20th, 1924, by Paul Lambert, the then owner of the island, but when the surface Crown grant was acquired by R. H. Schwartzkopf, of Los Angeles, for a summer home in 1926, sufficient development-work has been done on the claims to Crown-grant them.

The prevailing country-rock on the island is porphyrite, in which occur several shear-zones, with the shearing sometimes almost sufficient to produce schistosity. In these shear-zones there frequently occur veinlets, sometimes filled with quartz mineralized with solid chalcocite for widths varying from 1 to 5 or 6 inches. These veinlets are also often found to be filled with calcite, garnet, epidote, also mineralized with some chalcocite and copper-carbonate ore.

In places the country-rock is very much slickensided and sheared zones varying in width occur. At one point on the *Sir Chet* claim in a declivity between prominent bluffs which overlook the sea there occurs one of these sheared zones, in which a narrow vein having its strike N. 75° E. and dip vertical had been exposed at the time of the examination at the latter end of April, 1926. This was being developed by a well-timbered shaft sunk from the outcrop of the vein to a vertical depth of about 30 feet.

The vein maintains continuity to the bottom of the shaft, varying in width from 2 to 3 inches at the surface to a foot at a depth of about 15 feet. In the vein-filler in places there occurs a concentration of solid chalcocite ore about 3 inches at the widest, samples from which have been taken that assayed as high as 40 per cent. copper, but a sample taken by the writer across 12 inches of vein-filler assayed: Gold, trace; silver, 0.2 oz. to the ton; copper, 4.7 per cent. Another sample taken from the dump at the collar of the shaft from sorted ore assayed: Gold, trace; silver, 1 oz. to the ton; copper, 11.2 per cent.

The work was done on this property under the superintendence of David M. Anderson, mining engineer from Los Angeles, who proposed continuing the development during the summer until Crown grants were issued, then returning to Los Angeles to consult with the owner of the island as to future development.

The mining-work on the *Sir Chet* claim is situated about 1,200 feet from the westerly shore-line of the island at an elevation of about 300 feet. The sheared zone can be traced from near the shore-line up a declivity or shallow gulch to the development-work and for a distance of about 300 feet farther with a N. 75° E. strike. At that point the shearing forms a junction with another zone, with the shearing-planes striking N. 40° E., and the theory was formed that at or near this junction the vein might increase in width. If the development proved satisfactory the transportation facilities are good, as ore could be transported by means of a short aerial tramway to bunkers at deep water on the shore near the north-westerly end of the island in a fairly well-sheltered bay.

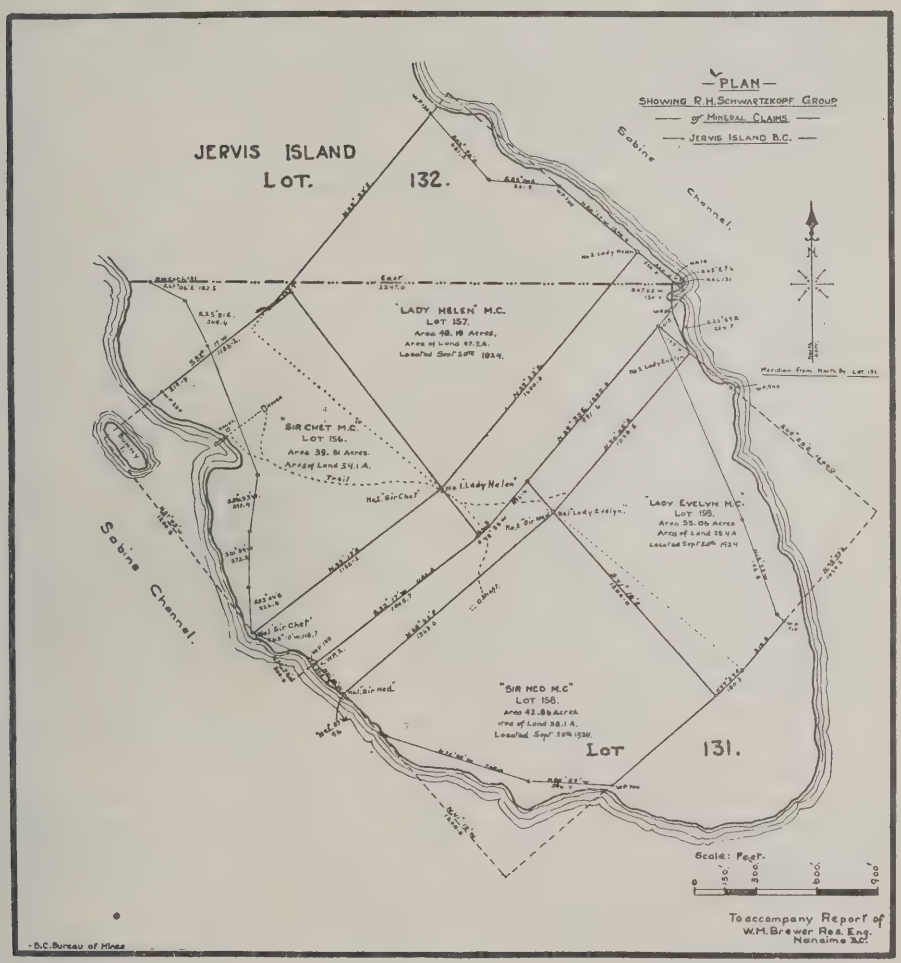
Wa-shi-la Bay, B.C.

Britannia M. & S. Co.—Copper Concentrator.

Vancouver Island Section.

That portion of Nanaimo Division described in this report as the Vancouver Island section comprises nearly half of the entire area occupied by that island. This section includes within its boundaries all of the coal-mining operations on Vancouver island, which is still by far the most important industry in the Nanaimo Mining Division. The production has for several years shown a considerable decrease owing to the competition of fuel-oil on the railways and ships, which formerly used coal exclusively. Under the heading "Inspection of Coal-mines" full details are given about coal-mines, so no further mention is made here.

The greater part of the eastern coast-line of Vancouver island is covered by sandstone, conglomerate, and other sedimentary rocks belonging to the coal-measures. This formation



extends into the interior of the island to the contact between the coal-measures and the Vancouver series of volcanics, which occurs near the easterly base of the Beaufort range, so that prospectors in search of metallic minerals are confined to the vicinity of the headwaters of the various streams that flow towards the east and south-east coasts, which is often several miles back from the coast.

A comparatively small portion of the Nanaimo Division lying north from Cowichan lake near the south-westerly boundary of the Division, another small area occupying part of the north-westerly end of the Division, also an area drained by Adams river, which flows into

Johnstone strait, are so far the only areas in which any discoveries of metallic-mineral deposits of promise have been discovered.

In the first-mentioned portion there are several mineral claims, most of which were located before the war, some of which show promising possibilities in ore-deposits carrying gold and silver values in addition to their copper content. The ore-deposits at the north-westerly end of the island carry chiefly silver and zinc values with some lead.

Caledonia.

This group contains the *Caledonia*, *Cascade*, and *Blue Bell* claims, for which application for Crown grants have been made. (*See* Annual Report for 1924.)

The claims are situated on Caledonia creek, which flows in a southerly direction into Quatse lake, which drains into the Quatse river that empties into Hardy bay, about 8 miles from the group.

Until within the last year the owners of the group were T. D. Harris and Robert A. Grierson, of Hardy Bay, and Murray C. Potts, of Alert Bay; but during 1926 the owners organized the Caledonia Mines Company, Limited, with the head office at Alert Bay. In June, 1926, active development was started. The old prospecting-work was extended by making several more open-cuts along the line of the contact between granite and limestone, in which the ore-deposits occur for a distance of about 300 feet westerly from Caledonia creek.

Since the report made in 1924 several new open-cuts have been made across the ore-body, the results from which demonstrate that the ore-body is practically continuous for a length of more than 300 feet; in that distance there are gaps between the open-cuts where the ore-body is not exposed.

The following claims have been added to the group and some prospecting-work done on them. These are the *Scotia*, which adjoins the *Caledonia* on the north-east and extends beyond the west line of the *Cascade;* the *Maple*, which adjoins the *Cascade* on the north-east and extends beyond the west line of the *Blue Bell;* and the *Thistle*, which adjoins the *Scotia* on the north-east.

The opinion expressed in the 1923 Annual Report with regard to the occurrence of the ore-deposits on this group and the geology surrounding the deposition of the ore has been confirmed by the recent development-work.

The mineralization, which is exposed in open-cuts on Caledonia creek, also in those designated as 3A, old Nos. 1 and 1B, consists of galena, zinc-blende, iron pyrites, some chalcopyrite, magnetite, and some pyrrhotite in a gangue of limestone and altered limestone, associated with which is much garnet and epidote. Although it was stated in the 1923 Annual Report that the ore-deposit was lenticular in structure, it would appear that the recent work done indicates that continuity may be maintained for a total length of at least 300 feet along the strike, starting at the outcroppings in the bed of Caledonia creek in a N. 60° W. (mag.) direction, but such has not been yet absolutely proven.

Ore has been exposed in all of the open-cuts except Nos. 1A and 2A, which have not been made deep enough to reach solid rock under the overburden of soil and gravel, which is so deep that although the face of each cut is fully 10 feet high no bed-rock is exposed.

The development-work that has been done since the previous examination consists of extending the crosscut adit projected to intersect the ore-body under the outcroppings in the bed of Caledonia creek; also four new deep open-cuts, designated as Nos. 1A, 2A, 3A, and No. 1B, and deepening the old No. 1 cut about 3 feet through its entire length of about 75 feet, in which near the face an ore-body is exposed more than 6 feet wide.

The new open-cuts are each one made across the contact between limestone and granodiorite in which the vein carrying ore occurs. They have been made about 15 feet deep at the faces and are of the following lengths: No. 1A, 100 feet; No. 2A, 75 feet; No. 3A, 75 feet; No. 1B, 40 feet. The old No. 1 cut, which was sampled across 6 feet of practically solid ore, is about 85 feet higher elevation than the crosscut adit under Caledonia creek. This open-cut is approximately 300 feet from the creek outcrop in a N. 60° W. (mag.) direction. It is about 30 feet in a south-easterly direction from open-cut No. 1B, which is the most north-westerly working of any extent on the group, except some surface prospecting done on the *Bluebell* in an endeavour to trace the ore-bearing vein through that claim, which has not yet been done. It is to determine depth maintained by the ore that every effort should be made by the management in future development-work.

The following assays show the values contained in the ore:—

Claim.	Width sampled.	Gold.	Silver.	Copper.	Lead.	Zinc.
	Feet.	Oz.	Oz.	Per Cent.	Per Cent.	Per Cent.
Caledonia	3	Trace	0.6	....	....	.....
Caledonia	9	Trace	19.0	3.2	....	.....
Cascade, grab sample	....	0.04	0.2	0.5	....	.....
Cascade	30	Trace	16.0	3.2	....	10.0
Cascade, from No. 3A cut	10	Trace	12.0	2.5	1.0	5.0
Cascade, from No. 1 cut	6	Trace	12.2	2.0	0.8	10.0
Cascade, from No. 1B cut	2.6	Trace	6.5	0.5	Trace	3.0

Silver Leaf.

This group contains the *Silver Leaf* and *Mountain Ash*, owned by the Silver Leaf Syndicate, of Duncan. It is located near the headwaters of Jump creek, a tributary of the Nanaimo river, and is reached by a good pack-horse trail from the mouth of Cottonwood creek, a tributary of Cowichan lake. The group was fully described in the Annual Report for 1922, and although considerable development-work has been done since that time, the conditions have not been materially changed since then.

The transportation facilities have not been improved very much since 1922, and this section, in which there are several other mineral claims in good standing, is still badly handicapped. Rails have been laid on the Canadian National Railway along the northerly shore of Cowichan lake, which will be eventually the logical way for shipping the ore.

Other Prospects.—On the Vancouver Island section there are short stretches along the coast-line where the coal-measures have been eroded off and the Vancouver volcanics are exposed, and quite a little prospecting-work has been done in the vicinity of Rock, Elk, and Humpback bays on the shore of Johnstone strait. None of these prospects have been developed to a sufficient extent to warrant the expression of any definite opinion as to their future possibilities.

Lucky Jim.

This group, containing the *Lucky Jim*, *Lucky John*, and *Marjorie* claims, is situated on Adams river, which empties into Johnstone strait about 15 miles north-westerly from Sayward settlement near the mouth of Salmon river. It was fully described in the Annual Report for 1918, when it was owned by Alex. and Walter McKay, of Vancouver. The group has not been examined since that time because until recently no work other than annual assessment-work had been done.

Further prospecting and some development work was done during 1926, when the property was submitted to the Consolidated Mining and Smelting Company of Canada. After an examination by the company's engineers an option was taken and a contract has been let for further prospecting by diamond-drilling and development-work to be done during 1927. This action by the Consolidated Company is well worthy of notice, because it marks a new departure by that company in acquiring interests in practically undeveloped prospects.

NEW WESTMINSTER MINING DIVISION.

This Division is situated north of and adjoining the International boundary. On December 31st, 1926, there were approximately 240 un-Crown-granted mineral claims in good standing and a large number of Crown-granted mineral claims in good standing in this Division. There were no mines from which shipments of ore were made during the past year. The development-work was chiefly confined to sufficient to enable owners to record the annual assessment-work.

The sections of the Division which appear to have been the most popular among the prospectors were the mountains in the vicinity of Pitt lake and river; Chilliwack lake and river; and in the Cheam range in the neighbourhood of the *Lucky Four* group, near the head of Wahleach (Jones) lake and creek; also to the south of the Chilliwack river on Pierce mountain; Canyon creek and Slesse creek near the International boundary.

Maple Leaf.

Several days were occupied about the middle of October in making an examination of this group, which contains the *Copper Queen*, *Maple Leaf*, *Empress*, and *Wayside*, owned by Carl and Frank J. Wagner, of Lyndon, Washington, who were working on the ground at the time the examination was made. This property is situated on the easterly side of Pitt lake, near the head, and is reached from the town of New Westminster via Coquitlam, with a launch from that point up the Pitt river and lake to the mouth of Scott creek.

The country-rock in this section is chiefly made up of greenstone and granodiorite. On the *Maple Leaf* group there is a fairly well-defined contact between these rocks, with a wide sheared zone in the greenstone, in which between the shearing-planes there occur narrow seams or veins of lenticular structure filled with pyrrhotite, pyrite, and a little chalcopyrite.

Development consists of an adit 67 feet long driven in the face of a precipitous mountain along the strike of the shear-zone in an easterly direction. The face of the mountain is so steep here that backs of about 400 feet vertical height will be gained in a short distance horizontally. In addition to the drift-adit there are several open-cuts and some stripping on the mountain-side above the adit.

In the following table of assays the first three samples were taken by the writer and the last three were taken by Mr. Elenbass, an interested party, who was on the ground at the same time.

Location.	Gold.	Silver.	Copper.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.
1. From a small dump from ore taken out near the face of the adit	.....	.....	2.0	Trace
2. From the right-hand side of the adit, about 12 feet from the face, a grab sample from a shot placed during the examination	.....	.....	0.8	Trace
3. From the face of the adit on the north side	.....	.....	0.2	Trace
4. From the right side in the adit 12 feet from the face	.....	.....	2.0	Trace
5. From the left side of the adit at the face	Trace	1.5	4.2	Trace
6. From an open-cut in the surface 50 feet above the adit	.....	.....	1.0	Trace

The examination was made during the time that Provincial Police were searching for Doc. Brown, who had been lost while prospecting amongst the glaciers northerly from the head of Pitt Lake.

Pitt Mining Co., Ltd. This company is the recorded owner of the *Viking* group, originally known as the *Golden Ears* group, which was examined and reported on in the Annual Report for 1923. The work that has been done since that examination has not materially changed the conditions and operations were suspended almost entirely during 1926. During the early spring of 1927 it is reported that a new company has been formed, capitalized with $250,000, to take over and operate the property, and it is proposed by the new company to start on the construction of a concentrating-mill with a capacity of 50 tons a day in the near future.

Silver Chief. This group, which was formerly known as the *Dolly Varden* group, containing eight claims, is situated near the mouth of Dolly Varden creek, which empties into Chilliwack lake at the south end. It is owned by the Silver Chief Mining Company and was examined and described fully in the Annual Report for 1923. Since that report was made the company has been engaged for a considerable proportion of the time in assisting to build a wagon-road to connect the north end of Chilliwack lake with Sardis, near the town of Chilliwack. Assistance was also given by the Mines Department to build this road.

The company took in machinery consisting of a compressor plant, water-wheel, and dynamo in the late fall of 1925, which, excepting the compressor plant, was lost by fire during the spring of 1926. The dynamo and water-wheel (turbine), 60 horse-power, were replaced during the fall of 1926, and development-work on the mine continued by driving a crosscut adit to intersect the vein described in the report for 1923, which it is expected will be accomplished in a distance of about 50 or 60 feet from the entrance.

During the spring of 1926 a sample shipment of 1,680 lb. of ore was made to the smelter, net returns being $92; the values being almost entirely in silver.

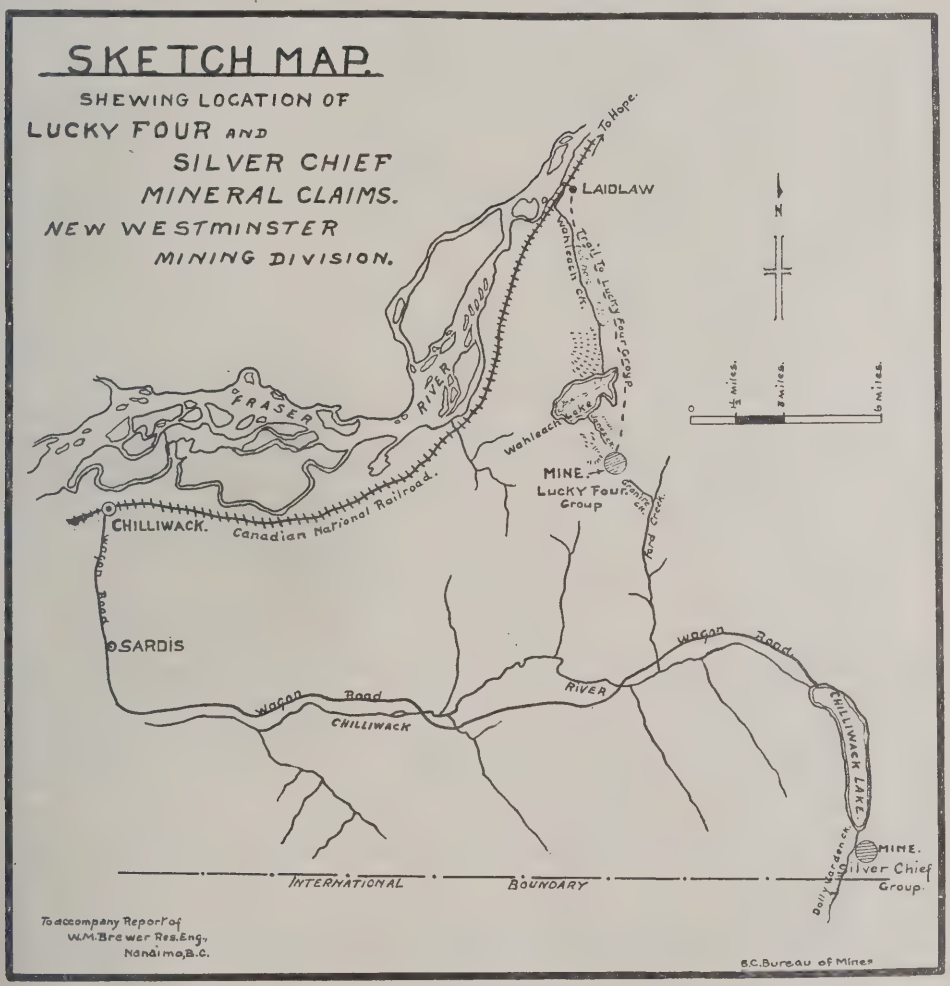
Lucky Four. This group was fully described in the Annual Report for 1919, and although it has been rumoured several times that Sperry & White, of Seattle, the recorded owners, had negotiated a sale to one or other of the big companies, there is no evidence up to date, so far as operations at the mine are concerned, of such negotia-

tions having been completed. It is not deemed necessary in this report to repeat the previous description.

Lillooet Valley Section.

This section of the New Westminster Division is referred to under a separate heading because of the fact that it was examined by C. E. Cairnes, of the Geological Survey of Canada, during the field season of 1925, and the geology and mineralogy are described in detail in papers written by Dr. Cairnes and published in the *Canadian Mining Journal* for February 18th and 25th.

The Lillooet valley as described by Dr. Cairnes extends from the Canadian Pacific Railway at Agassiz in a north-westerly direction to the extreme headwaters of the upper Lillooet river, about 25 miles north-westerly from the Pacific Great Eastern Railway crossing near the head



of upper Lillooet lake, a distance of approximately 110 miles, but it is only the south-easterly portion from Agassiz to Green Lake, on the Pacific Great Eastern Railway, that is included in the Western Mineral Survey District (No. 6).

The interesting feature with regard to this section is that the easterly boundary nearly coincides with the contact between the granodiorite batholith of the Coast range and the older altered sedimentaries of the Interior plateau, while the entire Mining Division is included within the Coast range, and consequently should be one of the most attractive fields for prospectors in this portion of the Province.

It is near that contact that the first lode-mining was done in the Province, near Hope, on the *Eureka* mineral claim, about 10 miles beyond the eastern boundary of the Mining Division. Silver ore was discovered and mining operations carried on as early as about 1875; in fact, the original claim is recorded as No. 1 in the records of Crown grants issued for mineral claims.

The section has received very little attention since about 1898 or 1899, when the *Providence* mine on Harrison lake, which was then owned by James McLaren, a part owner in the Harrison hot springs at the foot of the lake, was being developed, and the *Money Spinner* mine on the southerly slope of Fire mountain, about 13 miles from the head of Harrison lake on Fire creek, was also being operated, but since work was suspended on both of these properties about 1899 there has been but little attention given to any of them, especially the locations in and around the southerly slope of Fire mountain.

Dr. Cairnes in his articles describes briefly each of the groups situated in this section, and there is some possibility that new interest will be taken by some of the prospectors who have expressed such considerable faith in the section that certain mineral claims have been kept alive, while others have been Crown-granted and the taxes are being paid regularly.

Dr. Cairnes in his description includes the *Empress* and *Anna* groups, which were fully described by this writer in the Annual Reports for 1918 and 1922; also the *Providence* mine, described in the Annual Report for 1900 by H. Carmichael. Cairnes also describes the *Money Spinner* group on Fire mountain and the *May Flower* group near the Indian village Skookumchuck, about 20 miles from the head of Harrison lake. The last mentioned was described in the Annual Report for 1904, and the *King No. 4* group, located on the east bank of 25-Mile creek, near the foot of Little Lillooet (Tenas) lake.

Owing to the occurrence of high-grade free-milling gold-bearing quartz veins which outcropped on some of these various properties, the Lillooet valley, including Fire mountain, was prospected by quite a large number of men in 1898 and 1899, but principally owing to the fact that the free-milling character of the ore was replaced by sulphide ore a short distance below the surface, and the further fact that at that early date the methods of concentration and treatment of refractory gold ores either by cyanide or chlorination processes were not thoroughly understood by the owners of these several mineral claims, there has been practically no activity since the dates mentioned. The accompanying map showing the locations of mineral claims made in the Fire Mountain portion of the section is published in order to call attention to the popularity of the district at that time, and the possibilities that may follow provided the advanced methods of mining and metallurgy are practised in the future.

Non-metallics.

The New Westminster Division is especially favoured by the occurrences of beds of clay and shale which occur on Sumas mountain, east of Clayburn, on the Seattle branch of the Canadian Pacific Railway, and the Chilliwack branch of the British Columbia Electric Railway.

Clayburn Clay and Shale Deposits.—In Memoir No. 24-E, entitled "Preliminary Report on the Clay and Shale Deposits of the Western Provinces," by Heinrich Ries and Joseph Keele, published by the Canada Department of Mines in 1912, these clay and shale deposits are referred to as being one of the most interesting series of clay-deposits found in the western Provinces. This statement is followed by a description in detail of the deposits as they appeared at that time, together with the result of analyses and fire tests, which revealed how superior a quality of clay and shale these deposits contain.

The Clayburn Company, Limited, is one of the few companies in the Province operating beds of fireclay and shale and manufacturing therefrom firebrick, red and buff facing-bricks, and sewer-brick, and the business has grown to such importance that space is here devoted to a brief description of the plant.

The plant of the company is situated about 1 mile easterly from the Clayburn Station, operated jointly by the British Columbia Electric, Great Northern, and Canadian Pacific Railways. The property of the company extends in an easterly direction from the Clayburn plant to Kilgard, a distance by air-line of about 4 miles, but by auto-road about 10 miles.

In extent the clay and shale deposits owned by the company occupy about 1,100 acres, but this acreage is not in one compact body, but made up of areas of various extent, extending in easterly and south-easterly directions from Clayburn plant, which is the most westerly point

of the property of the company. The shale-mines are located at Kilgard on Sumas mountain, while the clay-mines are in the valley near Clayburn.

All the mining, with the exception of one open quarry at Kilgard, is underground work, a total footage of which is about 2,000 feet, the main slope being sunk on a 30° incline and crosscuts that portion of the clay-deposits being mined. The manufacturing plants are divided between that at Clayburn and another at Kilgard.

The Clayburn plant, at which is manufactured fire and sewer bricks, contains eleven kilns varying in dimensions, these being six round and five rectangular-shaped. The diameters of the round kilns vary from 30 to 36 feet; the dimensions of the rectangular kilns are 77 feet long by 28 feet wide by 12 feet high, which is also the height of the round kilns. At Kilgard the plant consists of six round and four rectangular-shaped kilns of about the same dimensions as those at Clayburn.

The machinery at both plants is driven by electric power transmitted from the British Columbia Electric Railway Company's power-station at Clayburn. The machinery consists of several rolls weighing 18 tons each for grinding; three brick-machines at Clayburn and two at Kilgard; also one sewer-pipe machine at Kilgard. The fuel used for burning brick is nut coal from Ladysmith, on Vancouver island. A fairly full description of the clay and shale beds was published in the Annual Report for 1917.

Blue Mountain Co.—The property owned by this company is situated in Section 2, Township 4, Range 4, west of 7th meridian, about 6 miles northerly from Whonnock Station on the Canadian Pacific Railway, at an elevation of about 1,200 feet above sea-level. This property was described in the Annual Report for 1917 and since that time the conditions surrounding it have not materially changed. During the fall of 1926 it was reported that the property had been acquired by a syndicate of capitalists and that development-work as well as the construction of a plant would be commenced at an early date. The lack of transportation is a great handicap to this property, as there is only a trail between the railway and the clay-deposits.

Pitt River Stone-quarry.—On Pitt river, near the lake, Gilley Brothers, Limited, operates a stone-quarry which when running to full capacity can produce about 400 cubic yards a day of crushed rock. This product is used for constructing roads, but a certain amount of what is termed "riprap" rock produced at this quarry is used for river-protection work. The quarry is fully equipped with crushers, elevators, and all the necessary machinery for handling this material.

Coquitlam Gravel-pit.—Another non-metallic mining industry is that which has been carried on by J. A. Dewar & Co. at the gravel-pit at Coquitlam, which it is reported has been recently acquired by the Deeks Sand and Gravel Company, Limited, of Vancouver. This company has also gravel-pits in the Vancouver Mining Division, which will be described in their proper place. The extent of the property purchased from Dewar & Co. is 125 acres, which includes water-frontage on Burrard inlet at Port Moody and a lease of the running right of the railway from the Coquitlam pits to Port Moody.

The new owners propose to equip this pit with all the necessary machinery, rolling-stock, and other equipment necessary to produce a large tonnage of sand and gravel daily.

VANCOUVER MINING DIVISION.

The entire area of the Vancouver Mining Division is occupied by the Coast Range granodiorite batholith, which is crosscut in two places: First, from the head of Howe sound by the Pacific Great Eastern Railway; and, second, by the Jervis river and inlet, the entrance to the latter being on the north side of the Seechelt peninsula. The Coast range is also traversed in a south-easterly direction from the headwaters of the upper Squamish river; consequently splendid opportunities are offered for prospecting in this section of the Division.

The work of the greatest importance from a mining standpoint in this Division is the operation carried on by the Britannia Mining and Smelting Company, Limited, headquarters for which are at Britannia Beach, on the east side of Howe sound, about 5 miles from the head. While it may be considered very disappointing that out of the large number of Crown-granted and un-Crown-granted mineral claims in the Vancouver Division the Britannia is at present the only producer, there was development-work going on during 1926 in other portions of the Division, notably along the Pacific Great Eastern, which may possibly result in other claims being developed into shipping-mines.

Britannia Mining and Smelting Co., Ltd.

The property owned by this company and the operations carried on have been described in several of the Annual Reports of the Minister of Mines, but particularly in that for 1924, when the property had been in active operation for twenty-five years. It has also been described in quite minute detail in an article written by James I. Moore, Jr., superintendent of the company, in the *Engineering and Mining Journal* of December 11th, 1926. In this report only a summary of the operations for the year 1926 is given, which has been furnished the writer through the courtesy of C. P. Browning, general manager, as follows:—

"*Operations for 1926.*

* "*Production.*—33,117,388 lb. copper; 10,472 oz. gold; 163,444 oz. silver.

"*Tonnages.*—Drawn from the mine, 1,187,632 wet tons; milled, 1,192,197 wet tons; milled, 1,156,470 dry tons; broken reserve in stopes, 1,358,415 tons; total reserves, including broken reserve, 6,649,556 tons.

"*Development.*

	Drifts.	Cross-cuts.	Raises.	Winzes.	Stopes.	Fillings.	Total.
Bluff-Jane	2,794	1,432	1,165	488	306	.....	6,185
Fairview	635	477	433	137	302	66	2,050
Empress	818	179	553	.....	55	264	1,869
Victoria	2,087	591	408	* 174	595	1,128	4,983
Robinson	31	.....	.....	.....	.....	.....	31
Fair West	788	525	.....	57	.....	.....	1,370
2,700 tunnel	3,799	.....	.....	.....	.....	.....	3,799
Totals	10,952	3,204	2,559	856	1,258	1,458	20,287

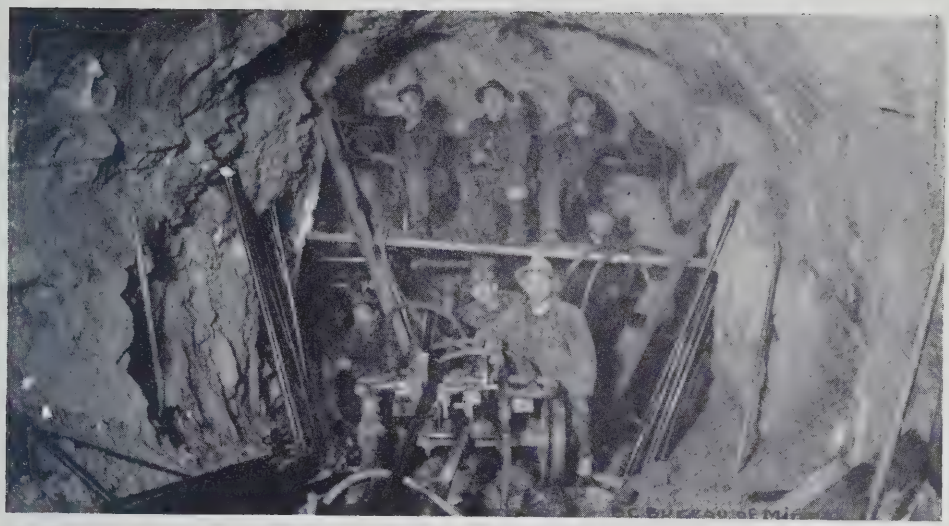
"Development in the *Bluff West* deposit was of primary importance during the year and placed in sight a large tonnage of new ore. In order to mine this section most economically, driving on the 2,700 haulage-tunnel was resumed in the spring. This meant an extension of 6,300 feet and a 500-foot shaft to connect with the 2,200 level of the *Bluff* mine. This plan will be completed during 1927, the connection being expected in April. This 2,700 haulage-tunnel will eliminate the outside 3-per-cent. narrow-gauge railway as an ore-carrier, greatly helping transportation conditions, especially in the winter months with heavy snowfall. The equipment used in the driving of this haulage-tunnel is noteworthy, in that four machines are set up on the drill-carriage and a Conway mechanical shovel is used for the mucking. To speed up the advance a car-shifter is used whereby a 2-ton car is lifted from the main track, set to one side, and replaced on the track after car ahead of it has been loaded. This eliminates the necessity of frequent switching, for the car-shifting arrangement is done close to the working-face.

"The *Victoria* mine was developed on the 2,350 level, a winze was sunk to the 2,500 level, and partial development of this latter before the close of the year. Development by levels in the *Victoria* section, including drifts, crosscuts, raises, and winzes, is as follows: 1,800 level, 219; 1,900 level, 420; 2,000 level, 596; 2,100 level, 444; 2,200 level, 615; 2,350 level, 2,155; 2,500 level, 534; total, 4,983.

"In the spring 380 acres of surface were electrically surveyed by the Swedish American Prospecting Corporation and during the year throughout the various sections of the mine there were 10,909 feet of diamond-drilling completed. In August and September the two 7½-k. gyratory crushers formerly operated at 68 rock-raise on 1,800 level were moved to the Beach mill just ahead of the roll plant. This change centralizes the primary gyratory crushing and also effected economies in repairs and better control of crushing conditions.

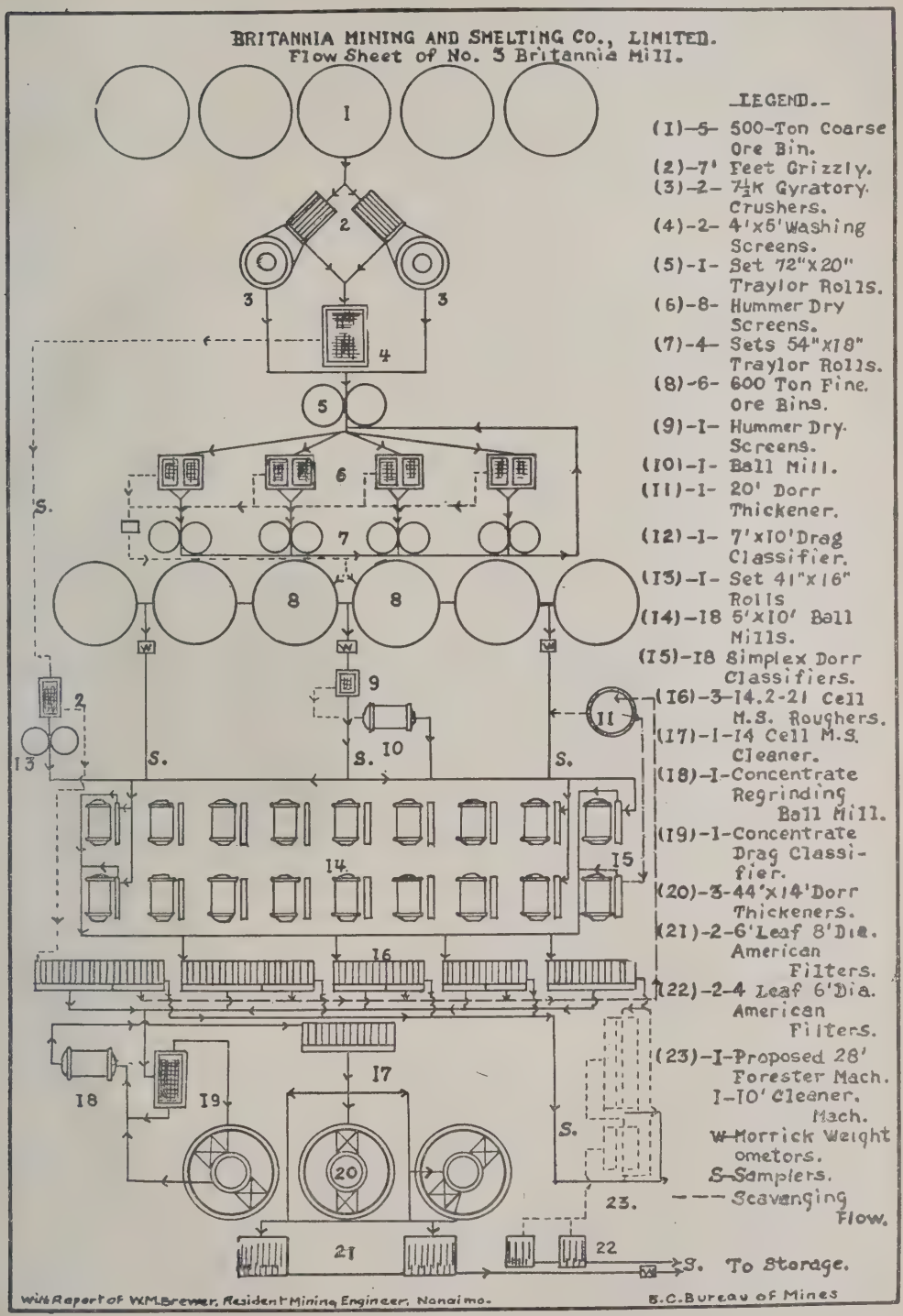
"*Milling.*—The mill treated an average of 3,177 dry tons per milling-day. A noteworthy change during the year in our milling practice was the adoption of a plan for re-treating the low-grade production taken from the tail end of the flotation units. This was called 'scavenging' and permitted of a much better recovery throughout the mill. Two additional grinding-mills and one 42- by 16-inch roll were added to the mill equipment during 1926, which gave a larger capacity in the fine-grinding department. Early in 1927 a pyrite concentrate carrying approximately 47 per cent. sulphur will be made and marketed to the manufacturers of sulphuric acid."

* Assay contents.



Britannia M. & S. Co.—Diamond-drill.

Britannia M. & S. Co.—Automatic Loader.


BRITANNIA MINING AND SMELTING CO., LIMITED.
Flow Sheet of No. 3 Britannia Mill.
LEGEND.-
(1)-5- 500-Ton Coarse Ore Bin.
(2)-7' Feet Grizzly.
(3)-2- 7½K Gyratory Crushers.
(4)-2- 4'x5' Washing Screens.
(5)-1- Set 72"x20" Traylor Rolls.
(6)-8- Hummer Dry Screens.
(7)-4- Sets 54"x18" Traylor Rolls.
(8)-6- 600 Ton Fine Ore Bins.
(9)-1- Hummer Dry Screens.
(10)-1- Ball Mill.
(11)-1- 20' Dorr Thickener.
(12)-1- 7'x10' Drag Classifier.
(13)-1- Set 41"x16" Rolls
(14)-18 5'x10' Ball Mills.
(15)-18 Simplex Dorr Classifiers.
(16)-3-14.2-21 Cell M.S. Roughers.
(17)-1-14 Cell M.S. Cleaner.
(18)-1-Concentrate Regrinding Ball Mill.
(19)-1-Concentrate Drag Classifier.
(20)-3-44'x14' Dorr Thickeners.
(21)-2-6' Leaf 8' Dia. American Filters.
(22)-2-4 Leaf 6' Dia. American Filters.
(23)-1-Proposed 28' Forester Mach.
1-10' Cleaner. Mach.
W-Morrick Weightometors.
S-Samplers.
--- Scavanging Flow.
S. To Storage.
With Report of W.M. Brewer, Resident Mining Engineer, Nanaimo.
B.C. Bureau of Mines

The flow-sheet published herewith showing the operations in the mill has been revised up to January 1st, 1927, by A. C. Munro, mill superintendent. It will be noted, by comparing the flow-sheet published in this report with that in the Annual Report for 1924, that the change in the milling practice of re-treating the low-grade production, called "scavenging," is shown by a broken line with dots between each break to distinguish that part of the treatment from what might be called the regular milling practice.

The Britannia Mining and Smelting Company is adopting a new practice with regard to the acquisition of additional mineral claims in other sections of the Province, and the writer is informed by C. P. Browning, general manager, that the company is prepared to have its engineers examine any promising properties.

Other Prospects on Howe Sound.

Considerable prospecting has been carried on during the past season, judging from the fact that there are twenty-one un-Crown-granted mineral claims in good standing in other portions of the Howe Sound section outside of the Britannia mineral-belt. Most of these un-Crown-granted claims are still held by the original locators, who are not financially able to do more than the annual assessment-work each year, but in many cases this annual assessment-work has been done for so many years that the results from it are beginning to show the difference between merely prospecting and serious development, so that a prospective purchaser is better able to judge the merits of such claims to-day than could have been done previously.

Horse Shoe. This claim is situated on McDonald's creek, on the westerly side of Howe sound, nearly opposite to Britannia Beach, and is owned by Mike Johanson, who resides most of the time in the cabin on the shore near the claim. The prospecting-work done on this claim indicates a rather extensive deposit of copper-sulphide ore of comparative low grade. The claim is convenient for transportation and the showings are good enough to warrant much more thorough prospecting and serious development-work than has been done.

Several other mineral claims in the Howe Sound section would have been examined during a trip made by the writer by launch for that purpose, but as the owners were absent and it was not possible to find the mine-workings without a competent guide these examinations had to be postponed. This is one difficulty hard to overcome, as most of the owners have to work as miners or other occupations and are only on their claims long enough each year to do the annual assessment-work.

Pacific Great Eastern Railway Section.

The Pacific Great Eastern Railway section of the Vancouver Division embraces all of the area on each side of the Pacific Great Eastern Railway from Squamish, the ocean terminus, to the divide between Alta and Green lakes, about 40 miles from Squamish, and includes the areas drained by the Squamish and upper Squamish, Mamquam, and Stawamus rivers and their tributaries.

The Pacific Great Eastern Railway traverses the Coast Range batholith almost at right angles to the strike or axis of the Coast range of mountains, and the building of the railway has been a great help to prospectors working in the adjacent mountains, because the grading in many places has resulted in indicating the locations of "roof-pendants" of altered sedimentaries which occur in several localities in the Coast range, and usually mineralized zones are found in them.

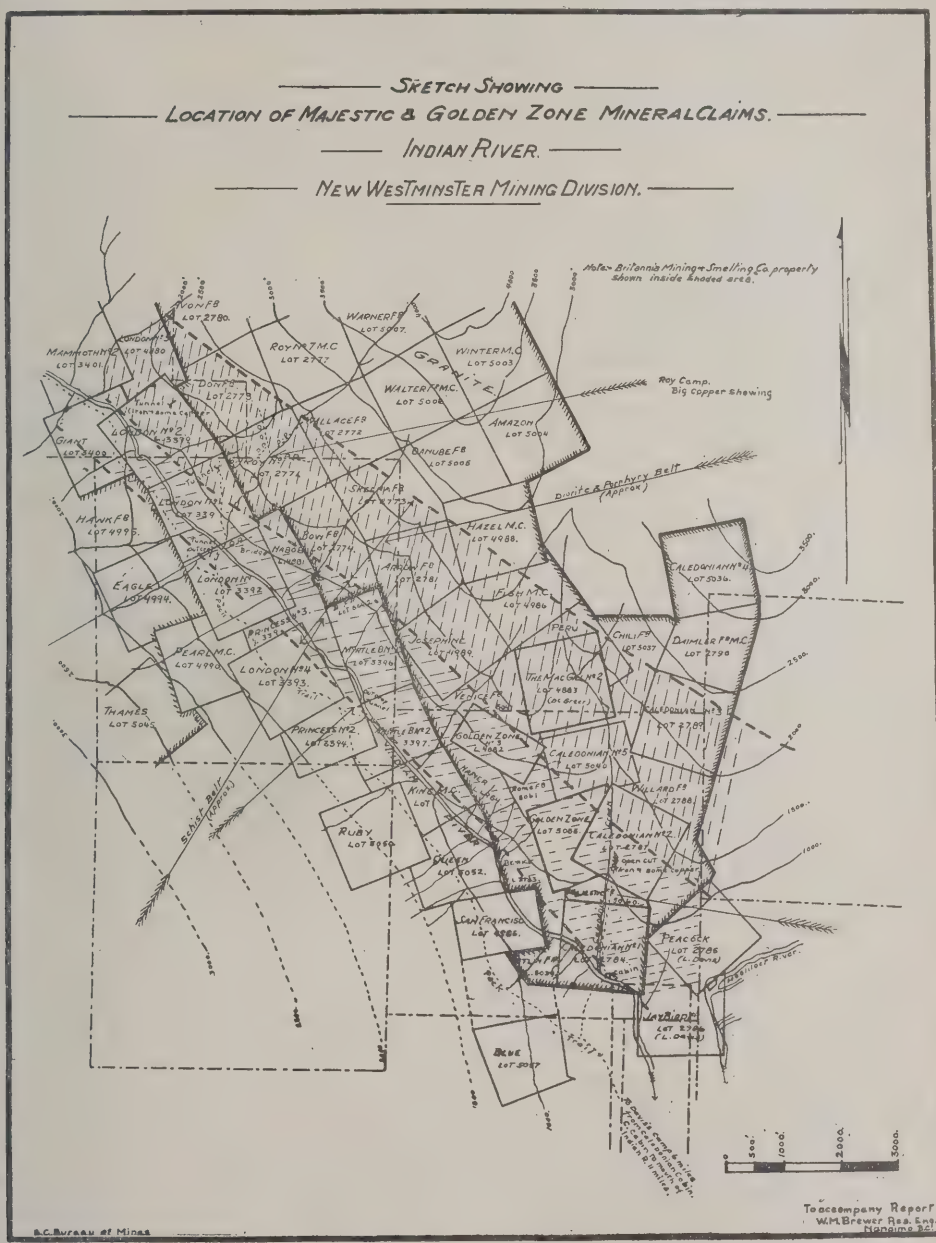
Most of the prospecting has been done within comparatively short distances on both sides of the railway, and there are nearly 150 mineral claims in good standing.

The writer made three trips during the past year into this section and examined all the groups on which recent work had been done and the owners or some competent guide could be conveniently found. The most important properties are the *Bruce, Radiant, Contact, McVicar* and *Brown, Rafuse* and *Perdue, Golden King* and *Bell* groups, situated in the southerly part of the section—that is, from within 3 to 12 miles from Squamish—the last named, the *Bell*, being located at the head of Indian river, 12 miles easterly from the Squamish settlement. The *Golden King* group on Ashloo creek, a tributary of the upper Squamish, about 30 miles in a north-westerly direction from Squamish, is the farthest removed from the railway in that direction.

In the northerly part of the section, which includes the vicinity of the Brandywine river, headwaters of the Cheakamus river, and the mountains in those vicinities, also around Daisy, Alta, and Cheakamus lakes, there are about fifty claims in good standing. Amongst those

examined in 1926 and on which the most development-work has been done is the *Brandywine* group, situated about 3 miles from Brew Siding, which is close to Brandywine falls, a favourite scenic attraction for tourists.

The majority of the mineral claims in the southerly part of the Pacific Great Eastern Railway section have been examined and reported on in previous Annual Reports as follows:



Bell group, 1913; *Bruce* group, 1919 and 1921; *McKinnon* group, 1919; *Radiant* group, 1921; *Goat Creek* group, 1925; *Gold King* group, 1925.

Brandywine. This group contains the *Brew, Brandywine, Eureka, Exchange, Annie, Pioneer, Cypress,* and *Wild Rose* claims and is owned by William Barclay and Dave Byington, of McGuire Siding; James McKenzie, Vancouver; and William

Anderson, Daisy Lake. (*See* Annual Report for 1924.) The mining camp is located on the north side of the Brandywine river, about 3 miles from the Pacific Great Eastern Railway, at an elevation of about 2,000 feet.

During 1926 the development has been extended by making large open-cuts in the schist country-rock that is impregnated with iron pyrite, some little galena and zinc-blende. The following samples were taken from the several open-cuts on the property during the examination made in 1926, the last four samples being submitted by the owners:—

Location.	Gold.	Silver.	Lead.	Zinc.
	Oz.	Oz.	Per Cent.	Per Cent.
1. Brandywine tunnel	Trace	2.0	------	3.0
2. Brew mineral claim	Trace	------	------	1.0
3. Brew mineral claim	Trace	2.0	0.8	5.0
4. Brandywine big lead across 6 feet	------	------	------	1.0
5. Brandywine big lead across 6 feet	------	------	------	2.0
6. Brandywine big lead across 6 feet	------	------	------	2.5
7. Brandywine big lead across 3 feet	0.10	2.6	0.5	4.0
8. Brandywine big lead across 8 feet	Trace	0.8	------	1.0
9. Brandywine big lead across 6 feet	0.02	0.6	Trace	2.0
10. Brandywine big lead across 6 feet	Trace	0.4	------	------
11. Brandywine big lead	Trace	0.4	Trace	0.5
12. Brandywine big lead	3.5	1.3	Trace	3.0
13. Brandywine big lead	Trace	0.4	Trace	Trace
14. Brandywine big lead	Trace	Trace	------	Trace

The samples marked from the big lead were taken from series of open-cuts made in the precipitous bank of the Brandywine river, about 40 feet between each open-cut, starting from a point about 10 feet above high water and with about 40 feet vertical between each cut, four in number. The surprising results in the two assays, one of 0.10 oz. and the other 3.5 oz. in gold to the ton, can be only explained from the fact that occasionally pannings of gravel on bars in the river and bed-rock have shown colours of placer gold, and it is quite possible that the schist-belt in which the mineralization is found is the source of the placer gold. As occasionally considerable quartz is found in the schist country-rock, it is possible that the samples which assayed the gold contained a considerable proportion of quartz. It is also possible that such pockets may be found to occur occasionally in the mineralized zone that is being developed.

Blue Jack. Adjoining the *Brandywine* group on the northerly side is the *Blue Jack* group that was examined and fully described in the Annual Report for 1924. Since that time a good pack-horse trail 3 miles in length has been constructed from McGuire's Station on the Pacific Great Eastern Railway to a new cabin on the property. New development on the claims consists of a tunnel driven about 60 feet to intersect the ore-body, but at the time the tunnel was examined this expectation had not been fulfilled.

Astra. This group contains the *Astra*, *Alfred*, *Stewart*, *Robert*, *Royal Oak*, and *Avenue* claims, owned by B. A. Falconer, Frank Price, and Henry Robertson. The *Astra* group is situated about 2 miles easterly from the cabin at the end of the *Blue Jack* trail and the boundaries adjoins those of the *Blue Jack No. 7* and *No. 8*.

The country-rock is very similar to that on the *Brandywine* and *Blue Jack* groups, with minerals occurring in a belt of greenish quartzose schist. The work done consists of some open-cutting about 15 feet long and 15 feet deep at the face. Two samples taken from the open-cut assayed:—No. 1: Gold, trace; silver, 1.6 oz. to the ton; lead, 2.6 per cent.; zinc, 5 per cent. No. 2: Gold, trace; silver, trace; lead, *nil;* zinc, 1 per cent.

Golden King. This group was fully described in the Annual Report for 1925. Since then most of the work that has been done was in completing the construction of a pack-horse trail, in which assistance was given under the "Mines Development Act," from the upper Squamish river to the property. Unfortunately, when work in the mine was being continued in the fall of 1926, the principal owner, Fred Pykett, died. This occurred just when the Consolidated Mining and Smelting Company of Canada had taken an option on the group and given Mr. Pykett a contract to continue the development-work. The company has since placed a force of miners on the property.

This property attracted a great deal of attention during the last two or three years on account of the high gold values found in some of the ore, which is chiefly solid pyrrhotite. Three samples taken from the last work done in the mine previous to Mr. Pykett's death assayed:—No. 1: Gold, 10.2 oz.; silver, 22 oz. to the ton; copper, 0.2 per cent. No. 2: Gold, 4.8 oz.; silver, 5.6 oz. to the ton; copper, 0.6 per cent. No. 3: Gold, 2 oz.; silver, 3 oz. to the ton; copper, 1.2 per cent.

Jervis Inlet Section.

No work other than the annual assessment-work has been done during 1926 on the *Lillie* group, situated near Mount Diadem, west from the mouth of Britain river, and containing the *Jupiter Nos. 1, 2, 3, 4,* and *5*, the *Star No. 1*, and *Leo Nos. 1, 2, 3, 4,* and *5* claims, the chief owner of which is Philip White, of Vancouver. The same conditions also apply to other mineral claims in the vicinity of Britain river, one of the tributaries of Jervis inlet on the west side and about midway between the entrance and the head of the inlet.

The *Baramba* group, owned by the Baramba Mining Company, Limited, is on the east side and near the head of Hotham sound, which is the west arm of Jervis inlet, with its entrance near the junction of that inlet and Malaspina strait. No work has been done on this group during 1926, and the same remarks apply to the *Jolley* group, adjoining the *Baramba* on the north. Both of these properties were examined in 1917 and the reports published in the Annual Report for that year. Since then there has been no activity around Hotham sound in the mining industry; consequently no further examinations have been made.

The *Norman* group, situated on the west side of Jervis inlet, in Prince of Wales reach, has had no work done on it for some years. It was also fully described in the Annual Report for 1917, when the claims were being worked under a bond by R. J. McLean and associates, of Vancouver.

Lynn Creek Valley Section.

Lynn Creek Zinc Mines, Ltd.

During the fall of 1926 an option was secured by the Porcupine Goldfields Mining and Development Company, Limited, on the property of the Lynn Creek Zinc Mines, Limited. F. E. McLaughlin, mining engineer for that company, who has charge of the work, has had a force of miners cleaning up the old camp, reopening the old openings, and continuing a thorough and systematic extension of prospecting-work that had been carried on intermittently for the past several years.

The Lynn Creek Mines, Limited, controls an area of approximately 450 acres, on which are located the following Crown-granted mineral claims: *Kemptville Extension, Evening Star, Pretty Bess, Fleming, Morning Star, Cascade, Jersey, Russel,* and *Lucky Star*. The property is located on the West fork of Lynn creek, North Vancouver, a distance of about 7 or 8 miles from the intake for the City of Vancouver's waterworks. This property was reported on by J. D. Galloway in the Annual Report for 1913, and by the writer in the Report for 1917. Since these reports were published there has been very little activity around the property, except that the company has been doing the annual assessment-work on some of the claims that were not Crown-granted, all of which since have been Crown-granted.

During the late fall of 1924 this property was bonded by A. B. Trites, and a new camp was built to accommodate a large force of men and a programme for extensive prospecting and developing work laid out; but in the spring of 1925 Mr. Trites concluded to drop the bond on the property, and it has been idle until this present resumption of development.

VICTORIA MINING DIVISION.

The Victoria Mining Division occupies the smallest area of any of the Divisions in the Western Mineral Survey District. The lode-mining industry in the Victoria Mining Division has shown very little progress during 1926. The chief reason for this is that while there are mines in the Division sufficiently developed to warrant operations being carried on, as is the case with the *Sunloch* mine on Jordan river, and probably the *Gabbro*, the adjoining property, the owners of these, however, are not yet prepared to install the necessary plants for treating the copper-gold-silver ore of which the deposits on these properties are made up.

Considerable further prospecting-work has been done on the *Sunloch* group during 1926, also an automobile-road has been constructed, with Government assistance, to the north-easterly limits of the extensive area included in the group. The property was fully described in the

Annual Reports for 1917, 1918, and 1920, and it is unnecessary to repeat these descriptions. An examination of the *Sunloch* and *Gabbro* groups was made recently by engineers for the Britannia Mining and Smelting Company.

The *Gabbro* group adjoins the *Sunloch* on the west and extends down the Jordan river on both sides. The group contains about twenty-three Crown-granted mineral claims and was fairly fully described in the Annual Reports for 1920, 1921, 1922, and 1923.

Mount Sicker Section.

Lenora and Tyee.

The work of clearing out the old workings on the *Lenora* and *Tyee* mines was continued during 1926 by a small force of men working under instructions from R. G. Mellin, of Duncan, who holds a lease with option to purchase on the *Lenora* property, and has made arrangements with Messrs. Thompson and Carmichael, the purchasers of the assets of the old Tyee Copper Company, to take over his lease and option.

Under this arrangement it is expected that with ore-bodies which were known when the *Tyee* mine was being operated, but which on account of the zinc contents it was not advisable to attempt to mine, will under the process that will be in future worked in the old Ladysmith plant furnish a nucleus of ore to keep the plant in operation regardless of a supply of custom ore.

Ladysmith Tidewater Smelters, Ltd.

This company has acquired the old Ladysmith smelter, together with the *Tyee* mine and all other assets of the old Tyee Copper Company. The company has also acquired the patent rights to the Gordon process for treating complex ores, and it was expected that previous to this time the company would have had its organization perfected and been busy making the alterations necessary in the old smelter before it would be prepared to receive ore for treatment.

It was hoped that in this report a full description of the process to be adopted at Ladysmith as well as the operations would have been available for publication, but up to the present time such has not been the case, and will not be until after the return from England of Messrs. Thompson and Carmichael.

Non-metallics, Cement, Building-stone, Sand, and Gravel.

The non-metallic branch of the mining industry in the Western District is practically all confined to the southern portion of the district, except the quarrying of building-stone on Haddington island, Nanaimo Division.

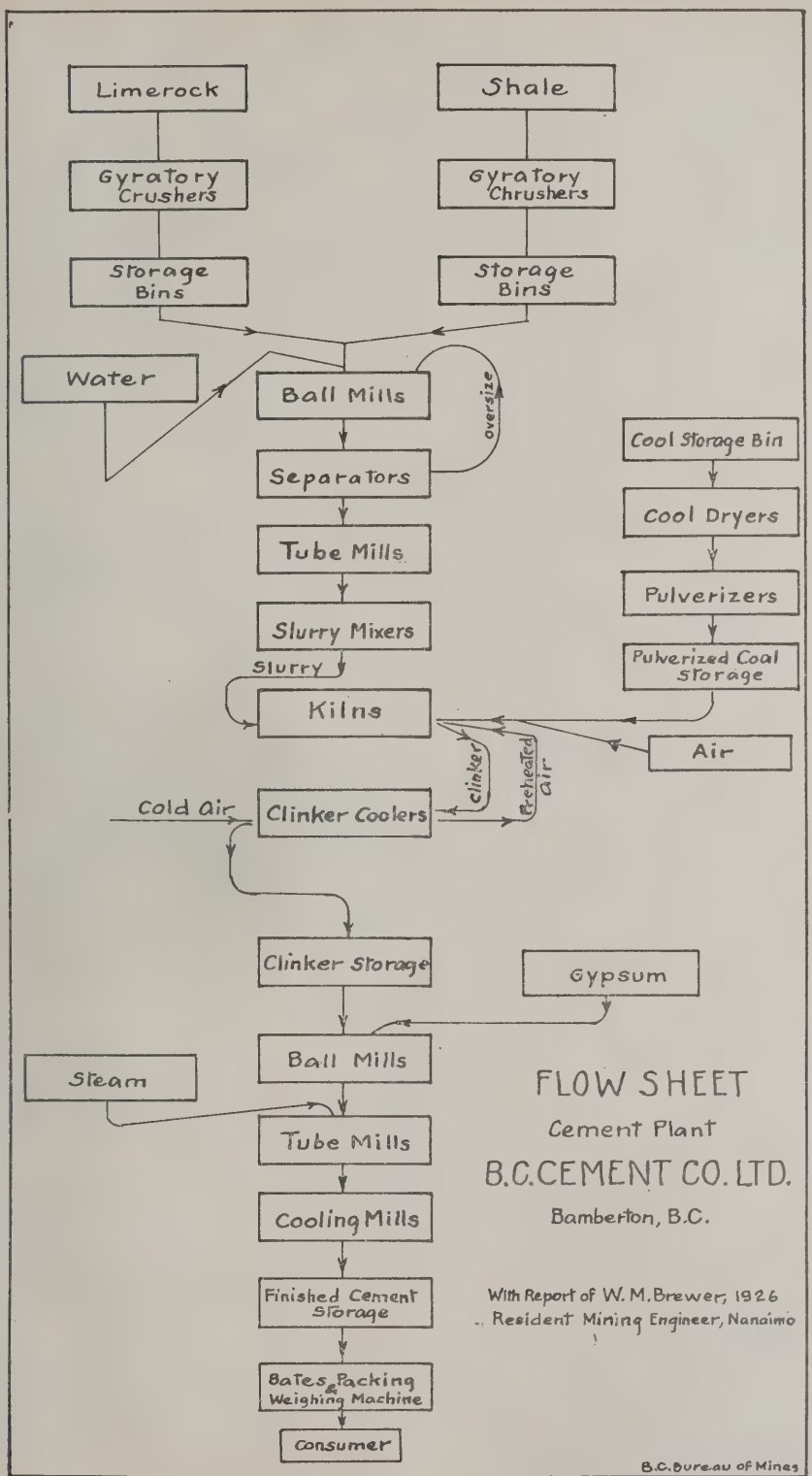
Haddington Island.—Haddington Island stone is an andesite and has been used in the Parliament Buildings and several other prominent buildings in the Province. It withstands weathering exceedingly well and the quarry is located very close to deep-water transportation.

B.C. Cement Co., Ltd.—An investment of approximately $3,500,000 has been made by this company at Tod inlet and Bamberton, on Saanich inlet, within 20 miles of Victoria, and what the company's activities mean to the south end of Vancouver island and Victoria is indicated from the fact that a pay-roll of approximately $250,000 annually is distributed by this company in addition to large expenditures for supplies. It can therefore be readily understood that this company's operations form the most important of any connected with the mining industry in the Victoria Division.

The company's manufacturing plant on the Saanich inlet is massive in size. There are two plants, one at Tod inlet and the other at Bamberton, on the west side of Saanich inlet. These have a combined annual manufacturing capacity of 1,500,000 barrels of Portland cement. They are practically identical in size and capacity; but the Tod inlet plant has been closed down since June, 1921.

The Bamberton plant is located on the side of a mountain beneath the famous Malahat highway and extends from the beach to a height of more than 200 feet above sea-level. The buildings have been designed in such a manner that gravity can be taken advantage of in handling raw material through the different methods of treatment from the limestone-quarries near the top of a bench to the storage-bunker, from which the finished cement product is loaded on to vessels.

There are two quarries, No. 1 and No. 2. The floor-level of the No. 1 quarry is about 150 feet above sea-level; the dimensions of the bottom are approximately 200 feet by 450 feet by about 150 feet high at the face. The dimensions of the No. 2 quarry are approximately 200 feet by 100 feet at the bottom, which is 70 feet higher than the floor of No. 1, with the face


Limerock
Shale
Gyratory Crushers
Gyratory Chrushers
Storage Bins
Storage Bins
Water
Ball Mills
oversize
Separators
Cool Storage Bin
Cool Dryers
Tube Mills
Pulverizers
Slurry Mixers
Pulverized Coal Storage
Slurry
Kilns
Air
Clinker
Preheated Air
Cold Air
Clinker Coolers
Clinker Storage
Gypsum
Ball Mills
Steam
Tube Mills
Cooling Mills
Finished Cement Storage
Bates Packing & Weighing Machine
Consumer
FLOW SHEET
Cement Plant
B.C. CEMENT CO. LTD.
Bamberton, B.C.
With Report of W. M. Brewer, 1926
Resident Mining Engineer, Nanaimo
B.C. Bureau of Mines

about 70 feet above the floor. The surface outcropping of the deposit of blue limestone which forms the calcareous content of the cement is very extensive. Its continuity has been determined for a very considerable distance along the strike of the bedding-planes in a north-westerly direction. The width has not been fully determined beyond the dimensions in the floor of the No. 1 quarry, neither has the depth yet been fully determined lower than the floor.

Air-drills and steam-shovels are used exclusively in quarrying and handling the broken limestone which is deposited from the steam-shovel into small freight-cars that are drawn up railway-tracks by cable to the top of the first of a series of mills, above a large gyratory crusher. The empty cars return by gravity down the incline into the quarry. From the crusher the broken material passes into the storage-bins and from there by gravity into a set of ball-mills, five in number, rotated by five motors; thence into separators, next into tube-mills, each 22 by 6 feet in diameter, where crushed shale is mixed with the crushed limestone; then into slurry-mixers, where water is added to the pulverized rock, and from the slurry-mixers into kilns.

In another unit of the plant, shale, which enters into the manufacture of cement, is crushed in a gyratory crusher set at the same elevation and parallel in the mill as that into which the lime-rock is deposited. From the crusher the broken shale passes into storage-bins, and from there passes into the same battery of ball-mills as the broken lime-rock with which the broken shale has been mixed, and from that point to the kilns, the mixture of limestone and shale having been perfected.

The next step in the manufacturing process is the pumping of the mixture, known to the trade as "slurry," to four storage-tanks to the right of the quarry. These are really huge, open concrete pans 66 feet in diameter and about 4 feet deep. They are situated at slightly different elevations and the slurry is made to flow from one to another to obtain exactly the desired proportion of ingredients. Samples from the tanks are tested hourly in the laboratory. While in the tanks the liquid is stirred constantly by huge paddles revolving about a central column in the middle of each pan.

From the pans the liquid is pumped higher up the hill to a huge building housing the drying-kilns. These are truly impressive contrivances, three in number. Each is a huge steel cylinder 185 feet long and 8.9 feet in diameter. Each is lined inside with firebrick and enters the base of a concrete chimney towering upwards for 100 feet. At the other end of the cylinder is a horizontal fountain of flame fed by pulverized coal from rotary fans and producing a temperature of 2,700° F. The cylinder is rotated slowly by powerful electric motors.

The liquid enters the chimney end of the cylinder and slowly flows down to the searing jet of flame. It gradually thickens and hardens. By the time it is ready to fall from the cylinder at the furnace it has become "clinker," a dry, hard substance, exactly similar in appearance to the stuff that is raked from the fire in an ordinary coal-furnace.

From the drying-kilns the clinker falls into more revolving steel cylinders, called rotary coolers, in which it is reduced in temperature by contact with cold air. From the coolers the clinker falls into concrete storage-bins.

Cement is mainly this clinker ground to extreme fineness. Mainly, but not altogether; for pulverized clinker would set hard as granite the instant water was added to it. This would constitute what is known as "flash" setting. To retard the setting-rate, gypsum is ground in with the clinker. This substance is procured from deposits on the Kelowna branch of the Canadian National Railways, south from Kamloops. It is elevated from scows at the water's edge by means of a cable-car to storage-bins built beside the clinker-bins.

In the desired proportions, clinker and gypsum are extracted through openings in the bottom of the bins to enter a series of ball-mills which duplicate those in the building far below. Here the mixture is pulverized to a rough powder and any particles of free lime are hydrated by the introduction of steam. Beneath the ball-mills again are the tube-mills, which complete the pulverizing of the mixture into cement. From the tube-mills the powder is conveyed to a series of cooler-mills below. When it emerges from these it is so fine that 90 per cent. of it will pass through a sieve containing 40,000 apertures to the square inch.

From the cooler-mills it passes along a screw conveyor to fall into any one of twenty-eight vast concrete storage-bins, each of which has a capacity of 2,600 barrels. From the bottom of each bin the cement is extracted by screw conveyors and given its final hoist skywards up a bucket elevator, so that it may fall down a shaft upon a screen and thus be deprived of possible "tramp" iron, stray nut or bolt.

Vancouver Granite Company—Nelson Island Quarry, Nanaimo M.D.

After having been screened the cement passes into a most ingenious packing-machine. This has five spouts at the bottom edge of the outer face. These spouts penetrate into an empty sack, not through the mouth, for that has been wired up by another machine, but through a valve in the bottom. The cement pours into the sack through the spout. As soon as 87½ lb. of it has entered, the flow is stopped by an automatic weighing-machine and the filled bag is dropped on to a conveyor-belt to be carried out to the hold of one of the company's two freight-steamers, the "Teco" or the "Carla."

There are the machine-shop, the blacksmith-shop, the general stores, and half a score of other subsidiary units included in the plant. Over 30,000 tons of coal is used every year for burning the cement clinker in the kilns. This is towed to Bamberton from Nanaimo or Ladysmith on scows, passed through a grinding-mill on the wharf, where it is pulverized into particles nearly as minute as the cement itself; then dried and hoisted up to the kilns by means of a conveyor.

In a big concrete sub-station electricity at 60,000 volts is stepped down by means of three transformers to 550 volts. Ten switchboards control the current used for power-motors and six control the current used for lighting purposes. The British Columbia Railway Company furnishes the electric power.

One of the most interesting sections of the plant is the laboratory. Here searching analyses are made by expert chemical engineers to test both raw material and the finished product. The company knows just exactly what has entered into the manufacture of the cement. It knows the exact degree of tensile strength and soundness of every sack of the product which reaches the market. Samples of every shipment are placed in sealed containers and, as it were, filed away.

About 180 men find employment at the Bamberton plant. All, of course, are domiciled on the company's property. On a shelf in the mountain-side above the quarries is a small village. Additional quarters are located near the shore-line. The company does all in its power to keep its employees cheerful and contented. In a huge recreation-hall, with a dancing-floor as large as that of the Empress Hotel, and every bit as smooth, gay parties are staged every week. The company has never had a strike or a dispute with its employees.

There is no foreign capital invested in the Bamberton plant, or in that at Tod inlet, which duplicates it. The company uses about 300 different kinds of supplies in its cement plants, and a large majority of these are secured in Victoria and other places throughout the Province.

The British Columbia Cement Company, Limited, is purely a Canadian-British enterprise and has a long and enviable record of good service to the public of British Columbia.

Nelson Island Granite.—The granite-quarries on Nelson island, at the entrance of Jervis inlet, have been in operation since 1902, when they were first started to quarry stone for piers for the Fraser River bridge, which was built by Armstrong, Morrison & Company, Limited, at that time. The quarries were acquired by the firm, but are operated under a separate organization known as the Vancouver Granite Company. The acreage contained in this property is approximately 350 acres, contained in Land Lots 468 and 2009, situated on the south-west corner of Nelson island. The face of the quarry is 60 feet high by 500 by 250 feet, which does not include the waste-dump.

Some idea can be gained with regard to the quality of this granite for various purposes, both useful and ornamental, from the fact that 125,000 cubic feet has recently been used in the construction of the Songhees dry-dock at Esquimalt.

The following is a list of places where the rock has been used for ornamental purposes, especially for memorial shafts and statues: Convent, Sacred Heart, Point Grey; Harding memorial, Stanley Park, Vancouver. War memorials: Victoria; Vancouver; Chilliwack; Nanaimo; Kamloops; Boise, Idaho; Calgary, Alberta; McMinnville, Oregon; and several other points in the Prairie Provinces; also for the mausoleum, Portland, Oregon; and for base course on ground floor in new Elks' Temple, Portland, Oregon.

The production from this quarry is approximately 50,000 cubic feet annually and has been a million and a half cubic feet since the quarry was started; as the rock averages 10 cubic feet to the ton, this represents a total tonnage of about 150,000, or 500 scow-loads. Transportation from quarry to the consumers is by contract with available shipping companies.

There is an average of fifteen men employed for about ten months annually. During Christmas the quarry is closed down and remains so for from one to two months, according to the weather, when merely a caretaker is employed. All the stone is sold in the raw state to various stone-cutters, by whom it is cut and polished.

Deeks Gravel and Rock Co., Ltd.—The production of rock and gravel for building purposes, chiefly for making concrete, on the Mainland is practically confined to one company, the Deeks Gravel and Rock Company, Limited, which owns and operates three pits in the Vancouver Division: Nos. 1 and 2 on the east side of Howe sound, where No. 1 produces crushed rock chiefly and No. 2 chiefly washed gravel; the No. 3 plant is 1 mile below the Second narrows on Burrard inlet on the north shore.

All of these pits are equipped with large crushers of the jaw-construction type, varying in sizes from 13 by 24 inches to 24 by 30 inches. Each plant is also equipped with Symons disk crushers, two being 24 inches and the third 36 inches. The total capacity of all the plants is 1,200 cubic yards a day.

Each plant is equipped with hydraulic machinery for washing the gravel, the Nos. 1 and 2 plants being so arranged that all the gravel from the pit is washed down to the bunkers on the shore by hydraulicking and gravity. In the hydraulic plant there are twelve giants altogether in use, of the No. 3 size, manufactured by the Vancouver Engineering Works. The No. 3 plant is equipped with a Drysdale pump having a capacity of 2,200 cubic feet of water a minute, which water is pumped from Seymour creek near North Vancouver.

The No. 1 pit and plant were acquired in 1908 by John F. Deeks, the present president and general manager of the company. The No. 2 pit and plant were acquired in 1912 and the No. 3 in 1925. The secretary of the company is H. S. Armstrong, with headquarters at 712 Pacific Building, Vancouver. The company also owns and operates a fleet of tugs and a large number of scows for transporting the production from the pits to the consumers.

Newcastle Island Stone.—On Newcastle island in Nanaimo harbour there is a large deposit of sandstone very valuable for building purposes. During the past few years the owner, John McDonald, has organized a new industry, so far as British Columbia is concerned, by cutting "pulp-stones" (very much like the old-fashioned "mill-stones" used in grist-mills), which are used in the pulp and paper plants along the Coast in place of the imported stones formerly in use.

The Newcastle Island building-stone has been used in several prominent buildings in the Province and is very popular amongst architects and builders because of its excellent weathering qualities. Since Mr. McDonald has been furnishing "pulp-stones" the quarry has been kept in almost continuous operation.

THE LATE GEORGE WILKINSON.

The mining industry of the Province sustained a severe loss in the sudden passing away at Victoria, August 11th, 1926, of the late George Wilkinson, Chief Inspector of Mines for British Columbia. As an operating colliery manager and later as Chief Inspector, Mr. Wilkinson had a thorough knowledge of the coal industry and its many problems; he possessed the respect and confidence of both the operators and the miners and his sterling worth was appreciated by all who came in contact with him.

Born May 27th, 1876, the late Mr. Wilkinson gained some early experience in coal-mining in the Cumberland field in England. He came to British Columbia in 1896 and was for years prominently identified with coal-mining in the Vancouver Island field. As Chief Inspector of Mines his experience was extended to cover the whole field of mining in the Province. During his term of office he was always in the lead in promoting measures for the safety and health of the workmen.

Through the death of Mr. Wilkinson, the Department of Mines lost a most valuable and capable official, one whose genial disposition endeared him to all his colleagues.

INSPECTION OF MINES.

REPORT BY JAMES DICKSON, CHIEF INSPECTOR OF MINES.

I have the honour to submit my annual report as Chief Inspector of Coal and Metalliferous Mines, covering the year ended December 31st, 1926. Appended hereto are the reports of the District Inspectors relative to the production of coal and number of persons employed; reports of the District Inspectors on metalliferous mines; reports of Instructors of Mine-rescue Stations; report of Secretary to Board of Examiners for coal-mine officials; list of accidents reported under the provisions of section 71, subsection (1), "Coal-mines Regulation Act," and section 19, subsection (1), "Metalliferous Mines Regulation Act"; and prosecutions.

PERSONNEL OF STAFF OF INSPECTORS, INSTRUCTORS, AND BOARD OF EXAMINERS, AND THEIR ADDRESSES AT HEADQUARTERS.

Inspectors.

James Dickson	Chief Inspector, Victoria.
James Strang	Inspector, Victoria.
Robert Strachan	Senior Inspector, Fernie.
Henry E. Miard	Inspector, Fernie.
John MacDonald	Inspector, Fernie.
H. H. Johnstone	Inspector, Rossland.
James W. Jemson	Acting-Inspector, Nanaimo.
Henry Devlin	Inspector, Nanaimo.
Thomas R. Jackson	Inspector, Nanaimo.
John G. Biggs	Inspector, Merritt.
Thomas J. Shenton	Inspector, Prince Rupert.

Instructors, Mine-rescue Stations.

John D. Stewart	Nanaimo Station.
John Thomson	Cumberland Station.
John T. Puckey	Fernie Station.
William C. Stone	Middlesboro Station.

Board of Examiners for Coal-mine Officials.

James Dickson	Chairman, Victoria.
James Strang	Secretary, Victoria.
H. E. Miard	Member, Fernie.

Messrs. Strang and Miard and the Inspector of Mines of the district in which an examination is being held form the Board for granting certificates of competency to coal-miners.

An Inspector of Mines is empowered to grant provisional certificates to miners for a period not exceeding sixty days between regular examinations.

CHANGES IN THE INSPECTION BRANCH DURING 1926.

George Wilkinson, who had held the position of Chief Inspector of Mines for a number of years, died in August after a very brief illness.

James Dickson, Inspector of Mines and member of the Board of Examiners, was appointed to the position of Chief Inspector of Mines, made vacant by the death of Mr. Wilkinson, and James Strang, for a number of years manager of Wellington-Extension mines, was appointed Inspector of Mines and member of the Board of Examiners.

James W. Jemson was appointed Acting-Inspector of Mines to take over the duties of Henry Devlin, Inspector of Mines, Nanaimo, who was on sick-leave at the end of the year.

Inspection Districts.

The Province is divided into six Inspection Districts, as follows:—

Inspection District.	Mining Divisions covered by Inspection District.
Vancouver Island	Victoria, Alberni, Clayoquot, Quatsino, and that portion of the Nanaimo Division situated on Vancouver Island.
Southern Coast	Vancouver, New Westminster, and that portion of Nanaimo Division situated on the Mainland.
Northern	Atlin, Liard, Stikine, Portland Canal, Nass River, Omineca, Peace River, Skeena, Bella Coola, and Queen Charlotte Islands.
Nicola-Princeton	Cariboo, Quesnel, Clinton, Lillooet, Kamloops, Ashcroft, Nicola, Vernon, Similkameen, and Osoyoos.
West Kootenay and Boundary	Revelstoke, Lardeau, Trout Lake, Ainsworth, Slocan, Arrow Lake, Slocan City, Nelson, Trail Creek, Greenwood, and Grand Forks.
East Kootenay	Fort Steele, Windermere, and Golden.

PRODUCTION.

The total tonnage produced by the coal-mines of the Province for the year ended December 31st, 1926, was 2,330,036 tons, being a decrease of 114,256 long tons or 4.68 per cent. below the production of 1925.

The Coast District, which includes Vancouver Island, Nicola-Princeton, and Telkwa coal-fields, produced 1,481,588 long tons, a decrease of 108,224 tons or 6.80 per cent. as compared with 1925.

The Vancouver Island collieries produced during 1926 1,293,175 tons, a decrease of 119,582 tons or a little over 8 per cent. as compared with 1925.

The Telkwa mines produced 1,260 tons, a decrease of 321 tons as compared with 1925.

The Nicola-Princeton District produced 187,153 long tons, an increase of 11,679 tons or 6.6 per cent. more than in 1925.

The East Kootenay District produced 848,448 long tons, a decrease of 6,032 tons as compared with 1925.

The coal companies producing during the year were: The Crow's Nest Pass Coal Company and Corbin Coal Company in the East Kootenay District; the Coalmont Collieries, Middlesboro Collieries, Princeton-B.C. Colliery, Tulameen Valley Coal Company, Keystone Coal Company, the Southern Okanagan Collieries, and Sunshine Coal Company in the Nicola-Princeton District; Telkwa Collieries in the Northern District; and the Western Fuel Corporation of Canada, Limited, Canadian Collieries (Dunsmuir), Limited, Granby Consolidated Mining, Smelting, and Power Company, Limited, Nanoose Colliery, East Wellington Coal Company, and the King & Foster Coal Company on Vancouver island.

The Morden mine and the Suquash mine, both owned by the West Coast Collieries, have not been operated for a number of years. During the year the Princeton-B.C. Collieries and the Nanoose-Wellington Collieries ceased operations.

A considerable amount of prospecting and exploratory work has been carried out in the Nicola-Princeton District, both by actual mining and by diamond-drilling.

On Vancouver island the Canadian Collieries (Dunsmuir), Limited, at the Wellington Extension Colliery have opened mines, on a small scale as yet, at two different parts of the property.

The following table shows the output and *per capita* production daily and for the year of the various mines:—

Colliery and Mine.	Gross Tons of Coal mined during Year.	Days worked.	Total No. of Employees.	Tons of Coal mined per Employee daily.	Tons of Coal mined per Employee for Year.	No. of Employees Underground.	Tons of Coal mined per Underground Employee daily.	Tons of Coal mined per Underground Employee for Year.
Nanaimo—								
No. 1 mine	323,533	255	728	1.74	444	493	2.57	656
Reserve mine	180,591	255	368	1.92	490	245	2.89	737
Wakesiah mine	40,197	144	167	1.67	240	111	2.52	362
Comox, Nos. 4 and 5	270,788	283	724	1.31	374	569	1.68	476
Extension, Nos. 1, 2, 3, and 6	175,811	263	540	1.23	325	392	1.70	448
South Wellington, No. 5	47,434	231	132	1.55	359	102	2.00	465
Granby, No. 1 mine	167,286	307	242	2.25	691	179	3.04	934
Nanoose, Lantzville	27,459	82	257	1.30	106	203	1.64	135
East Wellington, No. 1	43,474	228	173	1.10	251	139	1.36	312
King & Foster Coal Co.	16,602	263	72	0.87	230	47	1.34	353
Middlesboro, Nos. 2, 3, and 4	43,474	230	110	1.72	395	82	2.30	530
Keystone, Nos. 4 and 6	7,717	314	16	1.50	482	11	2.18	701
Coalmont, Nos. 3 and 4	121,458	248	317	1.54	383	192	2.54	632
Princeton, No. 1 shaft*	813	.....	.....	.....	.....	.....	.....	.....
Tulameen, No. 1 mine	13,225	270	22	2.22	601	13	3.69	1,017
Southern Okanagan Colliery	426	.....	13	.....	32	7	.....	61
Sunshine Coal Co.	40	.....	3	.....	.....	3	.....	.....
Telkwa, Goat Creek	1,260	119	7	1.42	180	7	1.42	180
Coal Creek, Nos. 2, 3, 1 E., 1 S., and 9	366,054	205	682	2.61	536	494	3.61	741
Michel, Nos. 3 and 8	363,795	248	614	2.38	592	408	3.59	891
Corbin, Nos. 3, 4, and 5	118,599	244	135	3.60	878	60	8.10	1,976

* Company in receivership since April 30th, 1925.

Collieries of Vancouver Island Inspection District.

The output of Vancouver Island collieries was 1,293,175 tons, and adding to this 11,907 tons taken from stocks makes a gross total of 1,305,076 tons. Of this amount, 154,614 tons or 11.8 per cent. was lost in preparation for the market, 112,960 tons or 8.7 per cent. was consumed by producing companies as fuel, and 1,037,502 tons or 79.5 per cent. was sold in the competitive markets.

Of the amount sold in the competitive markets, 941,093 tons or 90.7 per cent. of the amount sold and nearly 72.1 per cent. of the total output mined was sold in Canada, and 96,409 tons or about 9.3 per cent. of the amount sold and nearly 7.3 per cent. of the total output mined was sold in the United States.

Collieries of the Nicola-Princeton Inspection District.

Of the gross output of 187,153 tons produced by the collieries of the Nicola-Princeton District, 1,275 tons or 0.6 per cent. was lost in preparation for market, 12,151 tons or 6.4 per cent. was consumed by producing companies as fuel, and 173,955 tons or 93 per cent. was sold in the competitive markets.

Of the amount sold in competitive markets, 173,672 tons or 99.8 per cent. of the amount sold and nearly 92.6 per cent. of the total output mined was sold in Canada, and 283 tons or 0.2 per cent. of the amount sold and about 0.15 per cent. of the total output mined was sold in the United States.

Collieries of the East Kootenay Inspection District.

Of the gross output of 848,448 tons produced by the collieries of the East Kootenay District, 51,675 tons or 6.1 per cent. was consumed by the producing companies as fuel, 142,838 tons or 16.8 per cent. was made into coke, 37,978 tons or 4.5 per cent. was added to stock, and 615,957 tons or 72.6 per cent. was sold in competitive markets.

Of the amount sold in competitive markets, 418,724 tons or 67.9 per cent. of the amount sold and 49.4 per cent. of the total output was sold in Canada, and 197,233 tons or 32.1 per cent. of the amount sold and 23.2 per cent. of the total output was sold in the United States.

The following table shows for the past twelve years the output and the *per capita* production of the various districts:—

OUTPUT AND PER CAPITA PRODUCTION OF VARIOUS DISTRICTS.

Year.	District.	Gross Tons of Coal mined during Year.	Total No. of Employees at Producing Collieries.	Tons of Coal mined per Employee for Year.	No. of Men employed Underground in Producing Collieries.	Tons of Coal mined per Underground Employee for Year.
1915	East Kootenay District	852,572	1,748	488	1,183	721
	Coast District	1,120,008	3,230	347	2,512	446
	Whole Province	1,972,580	4,978	396	3,695	534
1916	East Kootenay District	882,270	1,674	527	1,125	784
	Coast District	1,603,310	3,386	474	2,569	624
	Whole Province	2,485,580	5,060	491	3,694	673
1917	East Kootenay District	551,751	1,481	372	944	584
	Coast District	1,846,964	3,689	501	2,816	656
	Whole Province	2,398,715	5,170	463	3,760	638
1918	East Kootenay District	732,864	1,327	552	814	900
	Coast District	1,845,860	4,100	450	2,844	645
	Whole Province	2,578,724	5,427	475	3,658	705
1919	East Kootenay District	558,806	1,369	409	1,000	559
	Coast District	1,850,142	4,597	402	3,145	588
	Whole Province	2,408,948	5,966	404	4,145	581
1920	East Kootenay District	847,389	1,582	536	1,062	798
	Coast District	1,849,385	4,767	388	3,129	591
	Whole Province	2,696,774	6,349	425	4,191	643
1921	East Kootenay District	759,755	1,774	428	1,207	629
	Coast District	1,809,884	5,111	354	3,515	515
	Whole Province	2,569,639	6,885	373	4,722	544
1922	East Kootenay District	554,361	1,538	360	1,063	521
	Coast District	2,026,554	5,106	396	3,649	551
	Whole Province	2,580,915	6,644	388	4,712	547
1923	East Kootenay District	740,531	1,434	516	965	767
	Coast District	1,802,456	4,715	395	3,377	546
	Whole Province	2,542,987	6,149	413	4,342	585
1924	East Kootenay District	273,518	1,147	238	797	343
	Coast District	1,714,015	4,271	401	3,097	553
	Whole Province	1,987,533	5,418	366	3,894	510
1925	East Kootenay District	854,480	1,466	582	989	864
	Coast District	1,589,812	3,977	399	2,839	559
	Whole Province	2,444,292	5,443	449	3,828	639
1926	East Kootenay District	848,448	1,431	592	962	881
	Coast District	1,481,588	3,891	380	2,795	530
	Whole Province	2,330,036	5,322	437	3,757	620

The following table shows the production and distribution of coal and coke by the various collieries and districts, compiled from returns furnished by the owners:—

Collieries of British Columbia—Production, 1926.

Mine.	Sold.			Total Sales.	Lost in Washing.	Used in making Coke.	Used under Co.'s Boilers, etc.	Total for Colliery Use.	Stocks.		Difference.		Output for Year 1926.
	In Canada.	In U.S.A.	Elsewhere.						First of Year.	Last of Year.	Added to.	Taken from.	
Vancouver Island.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons (2240lb.).
Canadian Collieries (D.), Ltd.—													
South Wellington	35,900	.....	.....	35,900	7,652	.....	3,882	11,534	.....	.....	.....	.....	47,434
Extension	94,929	38,384	.....	133,313	27,317	.....	12,697	40,014	4,127	6,611	2,484	.....	175,811
Comox	226,698	5,012	.....	231,710	41,244	.....	4,096	45,340	8,822	2,560	.....	6,262	270,788
Western Fuel Corporation of Canada, Ltd.—													
No. 1, Nanaimo	235,400	25,317	.....	260,717	21,877	.....	46,057	67,934	20,142	15,024	.....	5,118	323,533
Reserve mine	140,989	15,133	.....	156,122	15,417	.....	10,321	25,738	7,912	6,643	.....	1,269	180,591
Wakesiah mine	24,263	2,625	.....	26,888	1,926	.....	11,521	13,447	3,877	3,739	.....	138	40,197
Nanoose-Wellington Collieries, Ltd.	21,174	.....	.....	21,174	4,235	.....	2,050	6,285	.....	.....	.....	.....	27,459
King & Foster Coal Co., Ltd.	13,148	.....	.....	13,148	3,254	.....	200	3,454	.....	.....	.....	.....	16,602
East Wellington Coal Co., Ltd.	36,153	.....	.....	36,153	1,625	.....	5,955	7,580	359	100	.....	259	43,474
Granby Cons. M. S. & P. Co., Ltd.	112,439	9,938	.....	122,377	30,067	.....	16,181	46,248	2,509	1,170	.....	1,339	167,286
Totals, Vancouver Island	941,093	96,409	.....	1,037,502	154,614	.....	112,960	267,574	47,748	35,847	2,484	14,385	1,293,175
Nicola-Princeton District.													
Middlesboro Collieries, Ltd.	39,587	.....	.....	39,587	.....	.....	4,003	4,003	357	241	.....	116	43,474
Princeton-B.C. Colliery Co., Ltd	525	.....	.....	525	.....	.....	380	380	92	.....	.....	92	813
Coalmont Collieries, Ltd.	113,974	43	.....	114,017	.....	.....	7,441	7,441	.....	.....	.....	.....	121,458
Tulameen Valley Coal Co., Ltd.	11,710	240	.....	11,950	1,275	.....	.....	1,275	.....	.....	.....	.....	13,225
Keystone Coal Co., Ltd	7,410	.....	.....	7,410	.....	.....	327	327	100	80	.....	20	7,717
Southern Okanagan Collieries, Ltd.	426	.....	.....	426	.....	.....	.....	.....	.....	.....	.....	.....	426
Sunshine Coal Co.	40	.....	.....	40	.....	.....	.....	.....	.....	.....	.....	.....	40
Totals, Nicola-Princeton District	173,672	283	.....	173,955	1,275	.....	12,151	13,426	549	321	.....	228	187,153
Northern District.													
Telkwa Collieries, Ltd.	1,260	.....	.....	1,260	.....	.....	.....	.....	.....	.....	.....	.....	1,260
Grand totals, Coast District	1,116,025	96,692	.....	1,212,717	155,889	.....	125,111	281,000	48,297	36,168	2,484	14,613	1,481,588
East Kootenay District.													
Crow's Nest Pass Coal Co., Ltd.—													
Coal Creek Colliery	112,948	174,684	.....	287,632	.....	53,732	29,436	83,168	5,491	745	.....	4,746	366,054
Michel Colliery	258,332	574	.....	258,906	.....	89,106	16,073	105,179	290	.....	.....	290	363,795
Corbin Coals, Ltd.	47,444	21,975	.....	69,419	.....	.....	6,166	6,166	3,110	46,124	43,014	.....	118,599
Totals, East Kootenay District	418,724	197,233	.....	615,957	.....	142,838	51,675	194,513	8,891	46,869	43,014	5,036	848,448
Coal.													
Grand total for Province	1,534,749	293,925	.....	1,828,674	155,889	142,838	176,786	475,513	57,188	83,037	45,498	19,649	2,330,036

Collieries of British Columbia—Men employed, 1926.

Mine.	White Men.																		Indians.			Japanese and Chinese.									Total Men employed.		
	Supervision and Clerical.			Miners.			Helpers.			Labourers.			Mechanics and Skilled Labour.			Boys.			Labourers.			Miners.			Helpers.			Labourers.					
	U.	A.	T.	U.	A.	T.	U.	A.	T.	U.	A.	T.	U.	A.	T.	U.	A.	T.	U.	A.	T.	U.	A.	T	U.	A.	T.	U.	A.	T.	U.	A.	T.
Vancouver Island.																																	
Canadian Collieries (D.), Ltd.—																																	
South Wellington	6	2	8	72	..	72	..	..	..	19	13	32	5	9	14	..	6	6	..	..	..	..	..	.	..	..	..	..	..	..	102	30	132
Extension	21	14	35	260	..	260	8	..	8	75	15	90	22	56	78	..	16	16	..	..	..	..	..	..	..	..	..	6	47	53	392	148	540
Comox	27	17	44	106	..	106	3	..	3	65	41	106	76	72	148	6	2	8	..	..	..	115	..	115	99	..	99	72	23	95	569	155	724
Western Fuel Corp. of Canada, Ltd.—																																	
No. 1, Nanaimo	26	26	52	178	..	178	..	..	..	186	72	258	82	54	136	21	18	39	..	1	1	..	..	..	..	..	..	..	64	64	493	235	728
Reserve	11	9	20	127	..	127	6	..	6	68	29	97	19	30	49	13	12	25	1	..	1	..	..	..	..	..	..	..	43	43	245	123	368
Wakesiah	6	5	11	54	..	54	2	..	2	30	15	45	10	14	24	9	7	16	.	..	..	..	..	..	..	..	..	..	15	15	111	56	167
Nanoose-Wellington Collieries, Ltd.—																																	
Lantzville	20	7	27	99	..	99	21	..	21	38	7	45	25	13	38	..	6	6	..	..	..	..	..	..	.	..	..	..	21	21	203	54	257
King & Foster Coal Co., Ltd	3	3	6	31	..	31	..	..	..	12	16	28	..	6	6	1	..	1	..	..	..	..	..	..	..	..	..	..	..	.	47	25	72
East Wellington Coal Co., Ltd	2	3	5	70	..	70	..	..	..	44	4	48	17	9	26	6	6	12	..	..	..	..	..	..	..	..	..	..	12	12	139	34	173
Granby C. M. S. & P. Co., Ltd.—Cassidy	8	9	17	121	..	121	..	..	..	..	34	34	50	20	70	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	179	63	242
Totals, Vancouver Island	130	95	225	1118	..	1118	40	..	40	537	246	783	306	283	589	56	73	129	1	1	2	115	..	115	99	..	99	78	225	303	2480	923	3,403
Nicola-Princeton District.																																	
Middlesboro Collieries, Ltd	10	3	13	40	..	40	18	..	18	14	11	25	..	10	10	..	4	4	..	..	..	..	..	..	..	..	..	..	..	..	82	28	110
Princeton-B.C. Colliery, Ltd.*	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coalmont Collieries, Ltd	13	13	26	114	..	114	..	..	..	61	85	146	1	24	25	3	2	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tulameen Valley Coal Co., Ltd	1	3	4	10	..	10	2	..	2	..	5	5	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	192	125	317
Keystone Coal Co., Ltd	2	..	2	5	..	5	4	..	4	..	3	3	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	9	22
Southern Okanagan Collieries, Ltd	1	2	3	5	..	5	1	..	1	..	2	2	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	5	16
Sunshine Coal Co., Ltd	.	..	..	3	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	6	13
Totals, Nicola-Princeton District	27	21	48	177	..	177	25	..	25	75	106	181	1	39	40	3	6	9	..	..	..	..	..	..	..	..	..	..	..	..	3	..	3
Northern District.																													1	1	308	173	481
Telkwa Collieries, Ltd	1	..	1	2	..	2	2	..	2	1	..	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	7
Grand totals, Coast District	158	116	274	1297	..	1297	67	..	67	613	352	965	308	322	630	59	79	138	1	1	2	115	..	115	99	..	99	78	226	304	2795	1096	3,891
East Kootenay District.																																	
Crow's Nest Pass Coal Co., Ltd.—																																	
Coal Creek Colliery	24	12	36	255	..	255	..	..	..	47	68	115	159	106	265	9	2	11	..	..	..	..	..	..	..	..	..	..	..	..	494	188	682
Michel Colliery	16	9	25	199	..	199	..	..	..	33	102	135	144	83	227	16	12	28	..	..	..	..	..	..	..	..	..	..	..	..	408	206	614
Corbin Coals, Ltd	4	10	14	35	..	35	10	..	10	5	28	33	6	35	41	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	60	75	135
Totals, East Kootenay District	44	31	75	489	..	489	10	..	10	85	198	283	309	224	533	25	16	41	..	..	..	..	..	..	..	..	..	..	..	..	962	469	1,431
Grand totals for Province	202	147	349	1786	..	1786	77	..	77	698	550	1248	617	546	1163	84	95	179	1	1	2	115	..	115	99	.	99	78	226	304	3757	1565	5,322

*Company in receivership since April 30th, 1926.

Note.—U=underground; A=above ground; T=total.

LABOUR AND EMPLOYMENT.

During the year 1926 there were 5,322 persons employed in and about the coal-mines of the Province, a decrease of a little over 2 per cent. as compared with 1925.

The collieries of the Province were entirely free from labour disputes during the year, the only time lost being through lack of trade.

Apart from the regular holidays, the mines in Vancouver Island District lost about 18 per cent. of the working-days through lack of trade.

In the Nicola-Princeton District the different collieries worked from 75 to 95 per cent. of the working-days, averaging for the district about 88 per cent. of the working-days.

The mines in the East Kootenay District worked from 68 per cent. at the lowest to 82 per cent. at the highest of the working-days during the year, and worked for an average for the whole district about 77 per cent. of the time.

The table on page 344 shows the number of persons ordinarily employed in and about the mines, distinguishing the persons and different classes employed underground and above ground, compiled from returns furnished by the owners as required by section 66 of the "Coal-mines Regulation Act."

FUEL-OIL COMPETITION.

The importation and use of fuel-oil continues to be the greatest competitor of the coal produced in British Columbia.

In 1924 there were 98,351,974 gallons of fuel-oil imported into British Columbia; in 1925 the importation rose to 108,836,183 gallons, while in 1926 the quantity imported was 106,160,145 gallons. This amount of fuel-oil displaces the use of approximately 750,000 tons of coal a year.

The most hopeful sign from the coal-mining view is that the consumption of fuel-oil on the Pacific coast is now in excess of the production, with the result that the price has very considerably increased.

A large section of the Great Northern Railway has changed over from the use of fuel-oil in its locomotives to coal; much of this coal will be supplied from the Crowsnest Pass District.

ACCIDENTS IN AND AROUND COAL-MINES.

During 1926 there were 5,322 persons employed in and around the coal-mines. Ten fatal accidents occurred during the year, as compared with six for 1925.

The ratio of fatal accidents per 1,000 persons employed was 1.88, as compared with 1.10 in 1925; in 1924 the ratio was 1.66; in 1923, 7.32; in 1922, 4.66; in 1921, 1.45; in 1920, 2.67; in 1919, 2.10; in 1918, 5.15; in 1917, 8.51; averaging 3.6 for the ten-year period.

The number of fatal accidents per 1,000,000 tons produced during 1926 was 4.3. During 1925 the fatalities per 1,000,000 tons was 2.45; in 1924, 4.52; in 1923, 17.6; in 1922, 12.01; in 1921, 3.98; in 1920, 6.30; in 1919, 4.98; in 1918, 10.86; in 1917, 18.34; the average for the ten-year period being 8.53 per 1,000,000 tons mined.

The following table shows the collieries at which the fatal accidents occurred during 1926 and comparative figures for 1925:—

Name of Company.	Name of Colliery.	1926.	1925.
Canadian Collieries (D.), Ltd.	Comox, No. 4 mine	1	....
Canadian Collieries (D.), Ltd.	Extension	....	1
Canadian Collieries (D.), Ltd.	South Wellington, No. 5 mine	....	1
Western Fuel Corporation of Canada	Wakesiah mine	....	2
Western Fuel Corporation of Canada	Reserve mine	2	1
Granby Cons. Mining, Smelting and Power Co., Ltd.	Granby, No. 1 mine	4	1
East Wellington Coal Co., Ltd.	East Wellington	1	....
Crow's Nest Pass Coal Co., Ltd.	Coal Creek	1	....
Crow's Nest Pass Coal Co., Ltd.	Michel	1	....
Totals		10	6

The following table shows the various causes of fatal accidents and their percentage of the whole, with corresponding figures for the year 1925:—

Cause.	1926.		1925.	
	No.	Per Cent.	No.	Per Cent.
Falls of rock	3	30.00	4	66.67
Falls of coal	1	10.00	....	.....
Blow-outs of gas and material	3	30.00	....	.....
Mine-cars and haulage	2	20.00	1	16.67
Miscellaneous (underground)	1	10.00	1	16.66
Totals	10	100.00	6	100.00

The following table shows the number of tons of coal mined for each fatal accident in their respective classes in the years 1926 and 1925:—

Cause.	1926.		1925.	
	No. of Fatal Accidents.	No. of Tons of Coal mined per Fatal Accident.	No. of Fatal Accidents.	No. of Tons of Coal mined per Fatal Accident.
Falls of rock	3	776,665	4	611,073
Falls of coal	1	2,329,996	....	.....
Mine-cars and haulage	2	1,164,998	1	2,444,292
Blow-outs of gas and material	3	776,665	....	.....
Miscellaneous (underground)	1	2,329,996	1	2,444,292
Totals	10	232,999	6	407,382

The number of tons mined per fatal accident during 1926 was 232,999 tons, compared with 407,382 tons for 1925; the average for the last ten years was 115,747 tons.

The following table shows the fatalities from various causes in coal-mines during the year 1926 and comparisons with 1925, classified according to Inspection Districts:—

District.	Number of Deaths from Accidents.						Total.		Accident Death-rate.			
	Explosions of Fire-damp.	Falls of Ground.	Blow-outs of Gas and Material.	Haulage and Mine-cars.	Miscellaneous (Underground).	On Surface.	1926.	1925.	Per 1,000 Persons employed.		Per 1,000,000 Tons of coal mined.	
									1926.	1925.	1926.	1925.
Vancouver Island	....	3	3	2	....	....	8	6	2.35	1.73	6.18	4.24
Nicola-Princeton	....	....	....	....	....	....	....	....	.....	.....	.....	.....
East Kootenay	....	1	....	....	1	....	2	....	1.39	.....	2.35	.....
Northern	....	....	....	....	....	....	....	....	.....	.....	.....	.....
Province (1926)	....	4	3	2	1	....	10	....	1.88	.....	4.29	.....
Province (1925)	....	4	....	1	1	....	....	6	.....	1.10	.....	2.45

The following table shows the ratio of accidents per 1,000 employees and per 1,000,000 tons of coal mined in the Coast and East Kootenay Inspection Districts for the ten-year period ended December 31st, 1926:—

District.	No. of Fatalities.	Accident Death-rate.	
		Per 1,000 Employees.	Per 1,000,000 Tons of Coal mined.
Coast	162	3.6	9.1
East Kootenay	51	3.5	8.1
For Province	213	3.6	8.6

Details surrounding the occurrence of the fatal accidents in coal-mines during 1926 are as follows:—

The fatal accident which occurred to John Gray, miner, on February 4th in the Reserve mine, Western Fuel Corporation of Canada, Limited, was caused by a fall of top and side coal while engaged in retimbering preparatory to starting a new skip in pillar-extraction; some loose coal fell against the timbers, which gave way and allowed the roof-coal to fall; more care would have prevented this accident.

The fatal accident which occurred to David Alton, miner, on March 25th in Cassidy mine, operated by the Granby Consolidated Mining, Smelting, and Power Company, was caused by a blow-out of dirty coal and gas. The blow-out apparently gave no warning and the material displaced covered deceased. The seam in this immediate area was only 10 inches thick and consisted largely of dirt.

The fatal accident whereby Frank Sundberg and Bert Conti were killed on April 6th in the Cassidy mine, operated by the Granby Consolidated Mining, Smelting, and Power Company, was a blow-out of coal and gas. The seam at this point is comparatively thin and where the blow-out occurred the coal was only 18 inches thick, increasing to about 36 inches at the other side of the place; more details of this and the previous accident are given in another part of this report.

The fatal accident which occurred to How Tai, Chinese driver, No. 4 mine, Comox Colliery, on May 22nd, was apparently caused by being caught and crushed by a loaded car which was being hauled by the mule in charge of deceased. There was a slight grade at this point and the driver should have kept behind the car.

The fatal accident which occurred to Nick Tonick, rope-rider, on July 14th, Coal Creek Colliery, was caused by an empty trip, in charge of deceased, entering by mistake and at a high speed a level off the Main slope. This happened on the afternoon shift, when only a few trips are hauled, and deceased had charge of directing the trips and setting the switches to suit.

He had either omitted to close the switch for this level or else had failed to give the hoistman the signal for entering the level, with the result that the trip entered this level at the ordinary speed normal to the straight slope. The trip was derailed, displaced some of the supporting timbers, and caused a cave which resulted in the death of Tonick.

The fatal accident which occurred to Joseph Burns, rockman, Michel Colliery, on July 17th, was caused by deceased taking out a centre post from under a collar by use of a hammer, instead of using a prop-withdrawer as he was ordered to do just prior to the accident. The prop-withdrawer was convenient and was in daily use for this purpose.

When deceased drove the centre post from its position the roof caved on him, with fatal results. Obedience to the regulations and special orders given would have prevented this accident.

The fatal accident which occurred to William Foy, miner, Reserve mine, on August 21st, was due to a deficiency of timbering at the working-face; this allowed some roof matter to fall on Foy, with fatal results. Closer observance of the special rules *re* timbering would probably have prevented this accident.

The fatal accident which occurred to Thomas C. Wales, rope-rider, in Cassidy mine, on September 13th, was apparently caused by deceased slipping while boarding a single car being hauled up a short slope at low speed, and being run over or crushed by the car. This man

was wearing rubber shoes, the place was wet, and it is supposed that he had slipped and fallen in front of the car.

The fatal accident to George Edgar, miner, in No. 1 mine, East Wellington Coal Company, on November 10th, was due to a fall of roof. Deceased was apparently engaged in timbering this part of the roof that fell on him, with fatal results; a temporary post would have prevented this accident.

It will be seen that all the foregoing accidents, excepting those due to blow-outs, could have been prevented by the exercise of more care and a realization of the results of dangerous practice.

EXPLOSIVES.

The following table shows the quantity of explosives used in coal-mines during 1926, together with number of shots fired, how shots were fired, tons of coal produced per pound explosive used, and the average pounds of explosives per shot fired (these quantities include all explosives used for breaking coal and for rock-work in coal-mines) :—

Vancouver Island District.

Colliery and Mine.	Quantity of Explosive used in Pounds.	Tonnage for Mine.	Total No. of Shots fired.	Tons of Coal per Pound of Explosive used.	Average Pounds of Explosive per Shot fired.
Nanaimo—					
No. 1 mine	71,757	323,533	96,328	4.51	0.744
Reserve mine	57,453	180,591	76,708	3.14	0.748
Wakesiah mine	16,561	40,197	21,262	2.42	0.778
Comox, Nos. 4 and 5 mines	35,755	270,788	43,883	7.57	0.816
Extension, Nos. 1, 2, 3, and 6	66,670	175,811	89,108	2.63	0.748
South Wellington, No. 5	21,550	47,434	36,650	2.20	0.588
Granby, No. 1 mine	13,380	167,286	12,123	12.50	1.103
Nanoose, Lantzville	10,587	27,459	20,000	2.59	0.529
East Wellington, No. 1	18,251	43,474	25,440	2.38	0.717
King & Foster Coal Co.	48,000	16,602	40,000	0.35	1.200
Total for district	359,964	1,293,175	461,502	3.59	0.779

Nicola-Princeton District.

Middlesboro, Nos. 2, 3, and 4	17,200	43,474	24,850	2.52	0.692
Keystone, Nos. 4 and 6	4,380	7,717	5,490	1.76	0.797
Coalmont, Nos. 3 and 4	38,345	121,458	55,891	3.19	0.686
Princeton, No. 1 shaft	200	813	240	4.06	0.833
Tulameen, No. 1	3,000	13,225	6,000	4.43	0.500
Sunshine Coal Co.	.....	40	.....	.....	.....
Southern Okanagan Colliery	400	426	1,300	1.06	0.308
Total for district	63,525	187,153	93,771	2.94	0.677

Northern District.

Telkwa, Goat Creek	550	1,260	625	2.29	0.880

East Kootenay District.

Coal Creek, Nos. 2, 3, 1 E., 1 S., and 9	4,496	366,054	3,516	81.41	1.278
Michel, Nos. 3 and 8	17,468	363,795	18,729	20.82	0.932
Corbin, Nos. 3, 4, and 5	18,115	118,599	14,075	6.54	1.286
Total for district	40,079	848,448	36,320	21.16	1.120
Total for Province	464,118	2,330,036	592,218	5.02	0.783

QUANTITIES OF DIFFERENT EXPLOSIVES USED.

	Lb.
Monobels of different grades	417,756
Miner's Friend	4,150
Coalite "A"	1,009
Gelpermite	37,803
Stumping-powder	3,400
Total	464,118

The following is a list of explosives permitted for use in coal-mines by the Honourable the Minister of Mines under the provisions of section 101, General Rule 11, clause (2), "Coal-mines Regulation Act":—

Nobel Monobel.
Polar Monobel No. 3.
Polar Monobel No. 4.
Polar Monobel No. 6.
Coalite "C" L.F.
Miner's Friend No. 6.
Miner's Friend No. 9.
Polar CXL-ite.
Gelpermite No. 1.

MACHINE-MINED COAL.

During the year 1926 mining-machines produced 141,180 tons of coal, or 6.06 per cent. of the total. Of the total machine-mined coal, Vancouver Island District produced 138,836 tons, or 98.3 per cent., and East Kootenay District 2,344 tons, or 1.7 per cent.

The following tables give the district, number of machines, how driven, tons of coal produced, and type of machine used:—

District.	Number driven by		Tons of Coal produced.		Total Tons (2,240 lb.).
	Electricity.	Compressed Air.	Electricity.	Compressed Air.	
Vancouver Island	9	20	3,751	135,085	138,836
Nicola-Princeton	----	----	----	----	----
East Kootenay	----	2	----	2,344	2,344
Northern	----	----	----	----	----
Totals	9	22	3,751	137,429	141,180

TYPES OF MACHINES IN USE.

Type.	Districts.				Total.
	East Kootenay.	Nicola-Princeton.	Vancouver Island.	Northern.	
M.C. Pick-quick cutter-bar	----	----	5	----	5
Siskol punchers	----	----	9	----	9
Sullivan chain-cutters	----	----	13	----	13
Radialaxe punchers	----	----	2	----	2
Hardy Post-type punchers	1	----	----	----	1
Sullivan coal-puncher	1	----	----	----	1
Totals	2	----	29	----	31

The machine-mined coal produced by the different companies during 1926 and comparative figures for 1925 are as follows:—

	1926. Tons.	1925. Tons.
Western Fuel Corporation of Canada, Nanaimo	86,241	86,683
Canadian Collieries (D.), Ltd., Comox	3,751	3,988
Nanoose-Wellington Collieries, Ltd.	10,587	9,348
East Wellington Coal Co., Ltd.	38,257	30,962
Princeton-B.C. Colliery	----	7,079
Crow's Nest Pass Coal Co., Ltd., Michel	1,644	340
Corbin Coals, Ltd.	700	----
Totals	141,180	138,400

SAFETY-LAMPS.

There were 4,661 safety-lamps in use in the coal-mines of the Province. Of this number, 329 were flame-lamps of the Wolf type and 4,347 were electric lamps of various makes, as follows: Edison, 3,560; Wheat, 787. No open lights are allowed in the coal-mines of British Columbia.

The following table shows the distribution of lamps by district, method of locking, and the illuminant used:—

Vancouver Island District.

Colliery and Mine.	Method of Locking Lamp.		Illuminant used.	
	Magnetic Lock.	Screw or Automatic Clip.	Naphtha Gasolene.	Electricity.
Nanaimo—				
No. 1 mine	66	560	66	560
Reserve mine	14	259	14	259
Wakesiah mine	10	126	10	126
Comox, Nos. 4 and 5 mines	26	598	26	598
Extension, Nos. 1, 2, 3, and 6	29	538	37	530
South Wellington, No. 5	....	139	7	132
Granby, No. 1 mine	8	180	8	180
Nanoose-Wellington	20	275	20	275
East Wellington, No. 1	10	165	10	165
King & Foster Coal Co.	3	60	3	60
Totals for district	186	2,900	201	2,885

Nicola-Princeton District.

Middlesboro, Nos. 2, 3, and 4	12	80	12	80
Keystone, Nos. 4 and 6	3	12	3	12
Coalmont, Nos. 3 and 4	10	240	10	240
Tulameen, No. 1	1	27	1	27
Southern Okanagan Colliery	2	.....	2	.....
Princeton, No. 1 shaft	....	.....	....	.....
Totals for district	28	359	28	359

Northern District.

Telkwa, Goat Creek	8	.....	8	.....

East Kootenay District.

Coal Creek, Nos. 2, 3, 1 E., 1 S., and 9	65	570	65	570
Michel, Nos. 3 and 8	27	463	27	463
Corbin, Nos. 3, 4, and 5	10	70	10	70
Totals for district	102	1,103	102	1,103
Totals for Province	324	4,362	339	4,347

The following is a list of safety-lamps permitted for use in the coal-mines of British Columbia:—

Approved (Electric) Safety-lamps.

No. 1.—The electric lamp manufactured by the Edison Storage Battery Co., Orange, N.J., U.S.A., under approval No. 10 of the United States Bureau of Mines. This lamp shall be used with a flexible cord identified by the Bureau's specification CD–17. The only bulbs approved for use with this lamp are the symbol BM–10 bulbs, manufactured by the National Lamp Works of

the General Electric Co., Cleveland, Ohio; the symbol BM–10 bulbs, manufactured by the Edison Works of the General Electric Co., Harrison, N.J.; the symbol 26–V bulbs, manufactured by the Miniature Incandescent Lamp Corporation, 95 Eighth Avenue, Newark, N.J.; and the symbol BM–10 bulbs, manufactured by the Westinghouse Lamp Co., Bloomfield, N.J.

No. 2.—The Concordia approved portable electric (hand-lamp) mine-lamp, manufactured by the Concordia Electric Co., Pittsburgh, Pa., under approval No. 12 of the United States Bureau of Mines. The only bulbs approved for use with this lamp are the symbol Osram 08510 bulbs, sold by the Concordia Electric Company.

No. 3.—The Wico approved portable electric mine-lamp, manufactured by the Witherbee Igniter Co., Springfield, Mass., under approval No. 14 of the United States Bureau of Mines. This lamp shall be used with a flexible cord identified by the Bureau's specification CD–43. The only bulbs approved for use with the lamp are the symbol BM–14 bulbs, manufactured by the Edison Lamp Works of the General Electric Co., Harrison, N.J.

No. 4.—The Concordia approved permissible portable electric mine-lamp, manufactured by the Concordia Electric Co., Pittsburgh, Pa., under approval No. 12 of the United States Bureau of Mines. This lamp shall be used with a flexible cord identified by the Bureau's specification CD–17. The only bulbs approved for use with this lamp are the BM–15 bulbs, manufactured by the Nation Lamp Works of the General Electric Co., Cleveland, Ohio.

No. 5.—The Pioneer approved portable electric mine-lamp, manufactured by the Pioneer Electric Mine Lamp Co., Philadelphia, Pa., under approval No. 16 of the United States Bureau of Mines. This lamp shall be used with a flexible cord identified by the Bureau's specification No. CD–31, and with battery-plates manufactured by the Electric Storage Battery Co., Philadelphia, Pa. The only bulbs approved for use with this lamp are the BM–16 bulbs, manufactured by the Edison Lamp Works of the General Electric Co., Harrison, N.J.

No. 6.—The Wheat approved portable electric mine-lamp, manufactured by the Koehler Manufacturing Co. (Inc.), Marlboro, Mass., under approval No. 17 of the United States Bureau of Mines. This lamp shall be used with a flexible cord identified by the Bureau's specification CD–31, and with battery-plates manufactured by the General Lead Battery Co., Newark, N.J. The only bulbs approved for use with this lamp are the BM–17 bulbs, manufactured by the National Lamp Works of the General Electric Co., Cleveland, Ohio.

(Unless otherwise specified, all lamps are cap-lamps.)

Approved (Flame) Safety-lamps.

No. 12.—The bonneted, double-gauze lamp, with magnetic lock, known as the Wolf lamp.

No. 13.—The flat-wick steel-frame lamp, as specified in approval No. 201 of the United States Bureau of Mines, manufactured by the Koehler Manufacturing Co., Marlboro, Mass., U.S.A.

No. 14.—The round-wick steel-frame lamp, as specified in approval No. 201–A of the United States Bureau of Mines, manufactured by the Koehler Manufacturing Co., Marlboro, Mass., U.S.A.

No. 15.—The flat-wick steel-frame lamp, as specified in approval No. 202 of the United States Bureau of Mines, manufactured by Ackroyd & Best, Ltd., Arrott Power Building, Pittsburgh, Pa., U.S.A.

No. 16.—The flat-wick aluminium-frame lamp, as specified in approval No. 203 of the United States Bureau of Mines, manufactured by the Koehler Manufacturing Co., Marlboro, Mass., U.S.A.

No. 17.—The round-wick aluminium-frame lamp, as specified in approval No. 203–A of the United States Bureau of Mines, manufactured by the Koehler Manufacturing Co., Marlboro, Mass., U.S.A.

Approvals Nos. 201, 201–A, 203, and 203–A apply to magnetic-lock lamps that are equipped with steel gauzes. The only glasses approved for use with these lamps are marked "Macbeth No. 2100 High Speed." The only igniter approved for use with these lamps is the Koehler pyro internal igniter, 1915 model, using a cerium-zinc-copper alloy for igniter-points.

Approval No. 202 applies to a magnetic-lock lamp. The only glasses approved for use with this lamp are marked as follows:—

ACKD
BEST
A–1

This lamp is relighted electrically. The only relighter approved for this lamp is the Ackroyd & Best underground relighter.

NOTE.—*While the use of flame safety-lamps is permitted, it is the policy of the Department of Mines to encourage the use of approved electric safety-lamps for all persons underground in the coal-mines, except such flame-lamps as may be required by the officials of the mines in the carrying-out of their duty.*

ELECTRICITY.

Electric power is used for various purposes on the surface at fifteen mines and underground at eight mines. The purpose for which it was used, together with the amount of horse-power in each instance, is shown in the following table:—

Nature of its Use.	Aggregate H.P.
Above ground—	
Winding or hoisting	1,257
Ventilation	1,985
Haulage	424
Pumping	20
Coal washing or screening	1,967
Miscellaneous	1,655
Total horse-power	7,308
Underground—	
Haulage	1,800
Pumping	1,060
Coal-cutting	240
Miscellaneous	484
Total horse-power	3,584
Total horse-power above and under ground	10,892

Of the above amount, approximately 2,000 horse-power was operated as direct current and 8,892 horse-power as alternating current.

The electrical regulations passed in 1925 prohibits the use of electric locomotives by the open trolley-wire system after the 1st day of January, 1930, and no new installations of this system have been permitted since the above regulations were passed.

VENTILATION.

The District Inspectors' reports give details regarding the ventilation in the splits and main returns of the various mines. In one or two instances demands had to be made during the year for increases in the amount of air being circulated in a few of the splits in a few mines, but on the whole the provisions requiring adequate ventilation were generally well observed at the different mines.

USE OF THE BURRELL GAS INDICATOR.

The Burrell Gas Indicator is used in practically every ventilating-split at least once a month and continues to be the approved method for determining the CH_4 content in the mine atmosphere where the percentage is too small to be detected by means of the flame safety-lamp.

MINE-AIR SAMPLES.

Mine-air sampling was carried out as usual during the year and 223 samples were collected in the coal-mines of the Province; of this number, thirty-eight were spoiled in transit and accidents in the laboratory. While samples were taken in all mines at intervals, this method is carried out most intensively in the mines of the Crowsnest Pass District, where the gas-outflow is much higher than in the other mining districts of the Province.

The following table shows the analyses of mine-air samples taken in the various splits and main returns of the coal-mines in the Province during 1926 (the detailed analyses of mine-air samples taken in other portions of the various mines are on file in the office of the Chief Inspector of Mines):—

Return from Mine-air Samples taken in the Various Splits and Main Return Airways of the Coal-mines of the Province during the Year 1926.

Sample No.	Date.	Mine.	Ventilating District.	Working or Idle.	Tonnage per Day.	Tonnage of Split per Day.	Chemical Analyses.				Velocity of Air in Feet per Minute.	Quantity of Air in Cubic Feet per Minute.	Barometer.	Hygrometer.			Cubic Feet of Methane per Minute.	Cubic Feet of Methane per Day.	Cubic Feet of Methane per Ton.	Tons Methane per Day.
							CO_2.	O.	CH_4.	N.				Wet Bulb.	Dry Bulb.	Humidity.				
		Vancouver Island.																		
55D	Jan. 7	East Wellington....	Return shaft.....	Working ...	300	....	0.15	20.64	0.51	78.70	420	21,000	30.80	....	....	....	107	154,080	514	2.23
57D	" 13	" "	Long-wall return	Idle	300	....	0.15	20.83	0.28	78.84	100	2,000	30.60	....	....	.....	7	10,080	33	0.21
58D	" 14	Nanoose-Wellington.	Main return.....	Working ...	300	....	0.16	20.63	0.21	79.00	700	45,000	30.00	54.0	56.0	87.0	94	135,360	451	2.84
61D	March 11	" " .	"	" ...	300	....	0.10	20.80	0.10	79.00	650	45,500	30.40	53.0	56.0	81.0	45	64,800	216	1.36
320	June 28	No. 4, Comox (C.C.)	No. 1 slope return.....	" ...	600	....	0.16	20.75	0.08	79.01	400	50,000	29.81	61.0	61.0	100.0	40	57,600	96	1.21
321	" 28	" "	No. 2 Slope return.....	" ...	400	....	0.17	20.80	0.06	78.97	2,500	90,000	29.80	62.0	62.0	100.0	54	77,760	194	1.63
328	Aug. 6	" "	No. 1 split, No. 1 slope..	" ...	600	200	0.64	19.60	0.26	79.50	200	13,000	29.80	59.0	60.0	95.0	34	48,960	245	1.02
M1	Dec. 7	Well.-Exten., No. 5	Main return.....	" ...	200	....	0.31	20.64	0.28	78.97	400	16,000	30.25	58.0	60.0	88.0	45	64,800	324	1.36
335	" 8	No. 1 mine (W.F.C.)	Main South return.....	" ...	1225	600	0.35	20.29	0.12	79.26	400	16,000	30.20	58.0	59.0	94.0	19	27,360	45	0.57
336	" 8	" "	Slope return.....	" ...	1225	200	0.12	20.62	0.28	78.98	275	11,000	30.20	57.0	58.0	94.0	31	44,640	223	0.93
337	" 8	" "	No. 3 Level return.....	" ...	1225	212	0.39	19.86	0 16	79.59	649	22,700	30.20	57.0	58.0	94.0	36	51,840	244	1.08
338	" 10	Cassidy.....	Main return.....	" ...	630	....	0.18	20.60	0.26	78.96	1,070	154,080	29 20	50.0	52.0	86.0	400	576,000	914	12.09
339	" 10	"	South Side return	" ...	630	330	0.11	20.78	0.12	78.99	900	72,000	29.20	50.0	52.0	86.0	86	123,840	375	2.60
M5	" 15	Reserve (W.F.C.) ...	Main return.....	" ..	720	....	0.20	20.53	0.10	79.17	980	29,400	29.85	57.0	58.0	94.0	29	41,760	58	0.80
M9	" 16	East Wellington	"	" ...	250	....	0.15	20.75	0.20	78.90	900	19,800	30.02	57.0	58.0	94.0	40	57,600	230	1.21
341	" 20	No. 4, Comox (C.C.)	No. 1 Slope return.....	" ...	600	....	0.20	20.54	0.54	78.72	300	14,000	29.70	57.0	58.0	94.0	75	108,000	180	2.26
342	" 20	" "	No. 2 Slope return.....	" ...	500	....	0.06	20.86	0.04	79.04	250	12,000	29.70	57.0	58.0	94.0	5	7,200	14	0.15
343	" 27	No. 1 mine (W.F.C.)	Main North return.....	" ...	1225	600	0.24	20.44	0.06	79.26	800	56,000	30.00	60.0	62.0	90.0	33	47,520	79	0.99
344	" 27	" "	Main South return.. ...	" ...	1225	625	0.36	20.06	0.13	79.45	700	40,000	30.00	57.0	58.0	94.0	52	74,880	120	1.57
347	" 30	No. 4, Comox (C.C.)	No. 1 Slope return.....	" ...	500	....	0.48	19.83	0.27	79.42	450	55,000	29.60	57.0	58.0	94.0	148	213,120	426	4.47
		Michel.																		
556	May 10	No. 3 mine.....	No. 3 split.....	" ...	860	120	0.13	20.53	1.40	77.94	110	8,580	26.49	49.0	49.0	100.0	120	172,800	1,440	3.19
557	" 10	"	No. 4 split.....	" ...	860	180	0.09	20.53	1.28	78.10	200	16,500	26.49	51.0	51.0	100.0	211	303,840	1,688	5.62
558	" 10	"	No. 5 split.	" ...	860	180	0.08	20.16	0.96	78.33	900	36,000	26.49	48.5	48.5	100.0	345	496,800	2,760	9.19
559	" 10	"	Main return.....	" ...	860	....	0.19	20.53	0.64	78.64	900	90,000	26.49	51.0	51.0	100.0	576	829,440	964	15.34
563	June 11	"	No. 3 split.....	" ...	860	120	0.10	20.55	1.47	77.88	80	6,720	26.20	50.0	50.0	100.0	99	142,560	1,188	2 63
564	" 11	"	No. 4 split.....	" ...	860	180	0.15	20.46	1.59	77.80	280	16,800	26.20	53.0	53.5	97.0	267	384,480	2,136	7.11
565	" 11	"	No. 5 split.....	" ...	860	180	0.12	20.58	1.09	78.21	900	36,000	26.20	51.0	51.0	100.0	392	564,480	3,136	10.45
566	July 9	"	No. 3 split.....	" ...	850	280	0.46	20.25	0 84	78.45	140	11,760	26.30	53.0	53.5	97.0	99	142,560	509	2.63
567	" 9	"	No. 4 split.....	" ...	850	210	0.08	20.59	0.96	78.37	240	21,600	26.30	53.0	53.0	100.0	207	298,080	1,419	5.51
569	Sept. 13	"	No. 4 split.....	" ...	850	210	0.12	20.62	1.04	78.22	310	24,800	26.10	....	....	.....	258	371,520	1,769	6 87
570	" 13	"	Main return	" ...	850	....	0.20	20.50	0.66	78.64	1,160	116,000	26.10	....	....	.....	766	1,103,040	1,297	20.40
		Coal Creek.																		
1394	Jan. 15	No. 1 East mine	No. 1 split.....	" ...	690	165	0.15	20.51	1.02	78.32	210	14,700	25.60	56.0	56.0	100.0	150	216,000	1,309	3.99
1395	" 15	"	No. 3 split.....	" ...	690	150	0.15	20.62	1.61	77.82	200	18,000	25.60	53.0	56.0	81.0	290	417,600	2,784	7.72
1396	" 15	"	No. 4 split.....	" ..	690	120	0.11	20.64	0.89	78.36	160	12,800	25.60	50.0	51.0	93.0	114	164,160	1,368	3.03
1397	" 15	"	North return.....	" ...	690	525	0.15	20.48	1.06	78.31	1,200	108,000	25 60	54 5	55.5	93.0	1,145	1,648,800	3,140	30.50
1401	" 21	No. 2 mine.....	No. 4 Incline District...	" ...	400	200	0.28	20.34	0.65	78.73	170	13,600	26.00	70.0	70.0	100.0	88	126,720	633	2.34
1407	March 11	"	No. 1 split....	" ...	400	200	0.25	20.43	1.08	78.24	340	17,000	26.00	58.5	59.5	93.0	184	264,960	1,324	4.90
1408	" 15	No. 1 East mine	No. 3 split.....	" ...	675	120	0.10	20.55	1.11	78.24	300	25,500	26.00	50.0	51.0	93.0	283	407,520	3,396	7.54

Return from Mine-air Samples taken in the Various Splits and Main Return Airways of the Coal-mines of the Province during the Year 1926—*Continued.*

Sample No.	Date.	Mine.	Ventilation District.	Working or Idle.	Tonnage per Day.	Tonnage of Split per Day.	Chemical Analyses.				Velocity of Air in Feet per Minute.	Quantity of Air in Cubic Feet per Minute.	Barometer.	Hygrometer.			Cubic Feet of Methane per Minute.	Cubic Feet of Methane per Day.	Cubic Feet of Methane per Ton.	Tons Methane per Day.
							CO_2.	O.	CH_4.	N.				Wet Bulb.	Dry Bulb.	Humidity.				
		Coal Creek—Contd.																		
1409	March 17	No. 3 mine	No. 1 split	Working	400	25	0.10	20.69	0.75	78.46	160	9,600	25.50	58.0	58.5	97.0	72	103,680	4,147	1.91
1415	" 29	No. 2 mine	No. 2 split	"	400	200	0.49	19.99	1.08	78.44	150	13,500	25.80	70.0	71.0	93.0	146	210,240	1,051	3.88
1419	April 15	No. 1 East mine	No. 1 split	"	675	225	0.21	20.33	1.46	78.00	270	18,900	....	57.0	57.0	100.0	276	397,440	1,766	7.35
1420	May 4	No. 3 mine	"	"	400	25	0.10	20.70	0.58	78.62	190	11,400	25.30	59.0	59.0	100.0	66	94,040	3,761	1.74
1421	" 4	"	No. 2 split	"	400	375	0.33	20.09	2.11	77.48	600	36,000	25.30	64.0	64.0	100.0	760	1,094,400	2,918	20.24
1423	" 6	No. 1 East mine	No. 3 split	"	675	120	0.10	20.58	0.83	78.49	330	26,400	25.40	51.0	52.0	93.0	219	315,360	2,626	5.83
1424	" 6	"	No. 4 split	"	675	120	0.15	20.51	1.14	78.20	230	17,710	25.40	54.0	54.0	100.0	202	290,880	2,424	5.38
1426	" 15	"	No. 2 split	"	675	210	0.18	20.31	1.59	77.92	220	20,460	25.70	56.0	57.0	93.0	325	468,000	2,228	8.65
1427	" 18	No. 1 South mine	No. 1 split	"	448	196	0.25	20.28	1.18	78.29	230	13,800	25.60	54.0	56.0	87.0	163	234,720	1,200	4.34
1429	" 18	"	Main return	"	448	...	0.24	20.37	0.60	78.79	750	45,000	25.60	61.0	61.0	100.0	270	388,800	867	7.19
1430	June 12	No. 2 mine	No. 2 split	"	400	200	0.50	19.76	1.11	78.63	90	8,640	25.70	74.0	74.0	100.0	96	138,240	691	2.55
1431	" 12	"	Main return	"	400	....	0.51	20.03	0.62	78.84	700	49,000	25.70	69.0	69.0	100.0	304	437,760	1,094	8.09
1433	July 6	No. 3 mine	No. 2 split	"	425	375	0.35	20.03	2.23	77.39	580	34,800	25.25	69.0	69.0	100.0	776	1,117,440	2,979	20.67
1434	" 6	"	Main return	"	425	....	0.29	20.26	1.29	78.16	1,100	66,000	25.25	66.0	67.0	93.0	851	1,225,440	2,883	22.67
1435	" 8	No. 2 mine	"	"	400	....	0.68	19.81	0.85	78.66	450	31,500	25.45	71.0	71.0	100.0	268	385,920	965	7.13
1436	" 8	"	No. 4 incline	"	400	200	0.47	20.03	0.96	78.54	100	9,600	25.45	72.0	72.0	100.0	92	132,480	662	2.45
1437	" 13	No. 1 East mine	No. 1 split	"	675	225	0.24	20.25	1.55	77.96	300	18,000	25.60	61.0	63.0	88.0	279	401,760	1,785	7.40
1438	" 13	"	No. 2 split	"	675	210	0.24	20.17	2.04	77.55	300	27,960	25.60	58.0	59.0	93.0	569	819,360	3,901	15.15
1440	" 14	"	No. 4 split	"	675	120	0.17	20.48	1.25	78.10	180	16,200	25.55	56.0	56.0	100.0	203	292,320	2,436	5.40
1441	Aug. 4	No. 3 mine	No. 2 split	"	425	375	0.39	19.92	2.42	77.27	600	36,000	25.60	69.0	70.0	94.0	871	1,254,340	3,344	23.20
1444	" 6	No. 1 East mine	"	"	675	210	0.24	20.15	1.99	77.62	350	21,000	25.65	59.5	60.0	97.0	418	577,920	2,762	10.69
1445	" 6	"	"	"	675	120	0.17	20.50	1.16	78.17	320	20,480	25.65	56.0	58.0	87.0	238	342,720	2,856	6.24
1447	" 10	No. 3 mine	No. 1 split	"	350	60	0.35	20.02	2.33	77.30	500	30,000	25.67	70.0	71.5	92.0	699	1,006,560	16,776	18.62
1448	" 10	"	Main return	"	350	...	0.27	20.28	1.32	78.13	800	48,000	25.67	....	....	.....	634	912,960	2,608	16.88
1451	" 19	No. 1 East mine	No 2 split	"	675	210	0.17	20.47	1 13	78.23	400	28,000	25.30	60.0	61 0	93.0	316	455,040	2,166	8.41
1454	" 24	No. 3 mine	"	"	400	375	0.32	20.12	1.99	77.57	640	38,400	25.60	70.0	71.0	94.0	764	1,100,160	2,933	20.35
1455	Sept. 2	No. 1 South mine	No. 1 split	"	448	196	0.34	19.88	1.97	77.81	150	9,750	25.50	61.0	61.5	98.0	192	276,480	1,410	5.11
1456	" 2	"	No. 2 split	"	448	282	0.10	20.62	0.33	78.95	220	7,600	25.50	52 0	53.0	93.0	25	36,000	127	0.66
1457	" 2	"	Main return	"	448	....	0.36	20.08	0.97	78.59	680	40,800	25.50	64.0	64.5	98.0	396	570,240	1,272	10.54
1458	" 8	No. 3 mine	No. 1 split	"	400	25	0.16	20.67	0.56	78.61	150	9,000	25.40	61.0	62 0	93.0	50	82,000	3,280	1.51
1459	" 7	"	No. 2 split	"	400	375	0.21	20.45	1.11	78 23	570	34,200	25.40	71.0	71.0	100.0	380	547,200	1,459	10.12
1460	" 7	"	Main return	"	400	....	0.30	20.30	1.13	78.27	1,000	60,000	25.40	66.5	67.0	97.0	678	976,320	2,440	18.06
1461	" 9	No. 2 mine	Diagonal district	"	400	200	0.26	20.43	0.88	78.43	250	12,500	25.70	63.5	64.0	98.0	110	158,400	792	2.93
1462	" 9	No. 1 East mine	No. 2 split	"	675	225	0.21	20.34	1.48	77.97	530	31,800	25.60	60.0	60.0	100.0	471	678,240	3,014	12.54
1464	" 14	"	No. 3 split	"	675	120	0.15	20.53	0.86	78.46	310	26,350	25 30	56.5	57.5	93.0	227	326,880	2,724	6.05
1466	" 14	"	North return	"	675	525	0.18	20.38	1 16	78.25	1,120	100,800	25.30	57.0	57.5	98.0	1,169	1,683,360	3,206	31.14
1467	Oct. 10	No. 3 mine	No. 2 split	"	425	375	0.27	20.34	1.25	78.14	430	30,960	25.60	70.0	70.0	100.0	387	557,280	1,486	10.30
1469	Nov. 1	"	"	"	425	375	0.27	20.31	1.43	77.99	300	21,600	25.30	69.0	69 0	100.0	309	444,960	1,186	8.23
1474	" 9	No. 1 East mine	No. 1 split	"	780	250	0.26	20.16	1.90	77.68	380	22,800	25 65	62.0	62.0	100.0	433	623,520	2,494	11.53
1485	Dec. 14	No. 3 mine	No. 2 split	"	400	375	0.20	20.47	1.09	78.24	480	34,560	25.70	....	..	.....	377	542,880	1,447	10.40
		Corbin.																		
39	May 5	No. 4 mine	Main return	"	120	....	0.15	20.27	0.11	79.01	700	24,500	24.90	52.0	52.0	100.0	27	38,880	324	0.71
40	" 5	No. 6 mine	"	"	300	....	0.05	20.89	0.10	78.96	660	36,300	24.90	40.0	40.0	100.0	36	51,840	173	0.95

INSPECTION COMMITTEES.

Practically all the mines throughout the Province have had inspection committees, appointed by the workmen under General Rule 37, section 101, "Coal-mines Regulation Act," who made monthly inspections on behalf of the employees.

The courtesy is acknowledged of many of the inspection committees in forwarding copies of their reports to this office. The different operations were reported by the above inspection committees to be in good condition generally.

COAL-DUST.

During 1925 regulations for precautions against coal-dust were put into force pursuant to the provisions of the "Coal-mines Regulation Act."

The floor, roof, and sides of every road or part of a road which is accessible must now be treated in one of the following ways: Either they shall be treated with incombustible dust in such manner and at such intervals as will ensure that the dust on the floor, roof, and sides respectively shall always consist throughout of a mixture containing not more than 50 per cent. combustible matter; or they shall be treated with water in such manner and at such intervals as will ensure that the dust on the floor, roof, and sides respectively is always combined throughout with 30 per cent., by weight, of water in the intimate mixture.

Tests of samples of dust, so taken as to be representative of the normal composition of the dust throughout the roads of the mine on the floor, roof, and sides respectively, shall be made as often as may be necessary, but not less frequently than once a month.

The results of the tests shall be posted at the entrance to the mine and recorded in a book to be kept at the mine for the purpose.

Since the passing of the regulations for precautions against coal-dust the operating companies have been giving this matter great attention, and through courtesy from them the Chief Inspector of Mines' office is furnished with copies of all tests made. Practically all the coal-mines in the Province have now got their roadways up to standard required by the regulations.

EXPLOSIONS.

There was a small ignition of gas in No. 3 mine, Michel Colliery, immediately following a shot that was fired in rock. It is supposed that a small quantity of gas had been contained in roof-cracks where it could not be detected by the safety-lamp.

SULPHUR-POISONING.

While some evidence, principally by smell, shows that sulphur exists in some of the areas being worked, no complaints have reached this office during 1926 to the effect that any miners were seriously affected by this condition.

DANGEROUS OCCURRENCES.

During 1926 there was reported, as provided for by section 71, subsections (*c*) to (*h*), forty occurrences, as follows: One broken slope-rope; thirty-two outbursts of gas and coal; three gob-fires; one bump; one ignition of gas; one breakage of compressed-air main; one breakage of lug on hoisting-cage; and the collapse of a trestle. Of the above outbursts of gas and coal, five occurred in the Coal Creek mines and the remaining twenty-seven in Cassidy mine, and practically all in one section of the mine.

ORDER STOPPING WORK UNDER AUTHORITY OF SECTION 87.

In a few instances during 1926 stoppage of work was ordered by the Inspection Department in parts of mines until proper remedies were applied for safeguarding those employed.

Usually a willing spirit of co-operation was shown by the various managements at the different collieries in applying the required remedies.

The most important stoppage was in connection with the No. 7 South section, Cassidy mine, operated by the Granby Consolidated Mining, Smelting, and Power Company, Limited. This section was opened by two rock tunnels, 2,200 feet long, driven from the Main slope at a point about 5,000 feet from the surface.

The part of the seam (Douglas) reached by the slopes gave early evidence of being subject to blow-outs of coal and gas. In most cases the blow-outs gave sufficient warning to permit the miners to retire to safety before the blow-out actually occurred, but in some cases the miners narrowly escaped being caught by the material thrown out.

On March 25th, while a miner was engaged in mining, a blow-out occurred which killed him. The seam at this point was only 10 inches thick and consisted of very dirty coal. This place was being driven to make a connection for ventilation and was only 5 feet wide and about 5 feet high; the rock floor being brushed to make the required height. Shots had been fired in the brushing on the previous shift and the miner had been working about fifteen minutes on the face when the blow-out occurred.

On April 8th two men were killed by a blow-out in No. 7 South Main level. The thickness of the seam in this place varied from 3 feet on the low side of the place to 18 inches on the upper side. The blow-out came diagonally from the upper corner and apparently gave little warning.

The District Inspector of Mines, Thos. R. Jackson, and the overman of the mine had been in this place only five minutes before this blow-out and there was no indication of anything unusual at that time. In this case also shots had been fired in the floor brushing on the previous shift, and the miners had only been working on the face for a very short time when the blow-out occurred.

In view of the absence of warning when a blow-out was pending where the seam was thin, the Inspection Department considered this area constituted too great a menace to the lives of the miners and a special investigation was conducted regarding this danger.

The late Chief Inspector of Mines, George Wilkinson, Thos. R. Jackson, James Dickson (now Chief Inspector of Mines), and the officials of the colliery, after thoroughly considering the matter, decided that no further advance should be made in this area.

The Honourable the Minister of Mines personally visited the area during this period and on the recommendation of his Inspectors confirmed and made permanent the order prohibiting further advance in this ground. Arrangements were made to recover the coal already blocked out and this section was practically abandoned at the end of 1926.

The accompanying map shows the more important blow-outs in the No. 7 South section.

INQUIRIES.

Arising from the circumstances connected with a fatal accident in the Reserve mine, Western Fuel Corporation of Canada, Limited, whereby a miner was killed by a fall of rock, a Court of Inquiry under the provisions of section 48, "Coal-mines Regulation Act," was held at the Court-house, Nanaimo, to inquire into the conduct of the manager, overman, three of the firebosses, and one miner. The Minister of Mines appointed William Wall, of Vancouver, to hold this inquiry, at which the persons whose conduct was being inquired into were represented by counsel, as was the Department of Mines. This inquiry was held on October 12th and adjourned until December 7th, Mr. Wall having made an investigation at the scene of the accident in the interval.

The decision of the Court was that, while the evidence did not show the existence of gross negligence on the part of the persons whose conduct was being inquired into, all of them had shown inattention to the special rules regarding timbering in the working-place where the miner was killed.

For this inattention the Court reprimanded the mine officials and miners concerned.

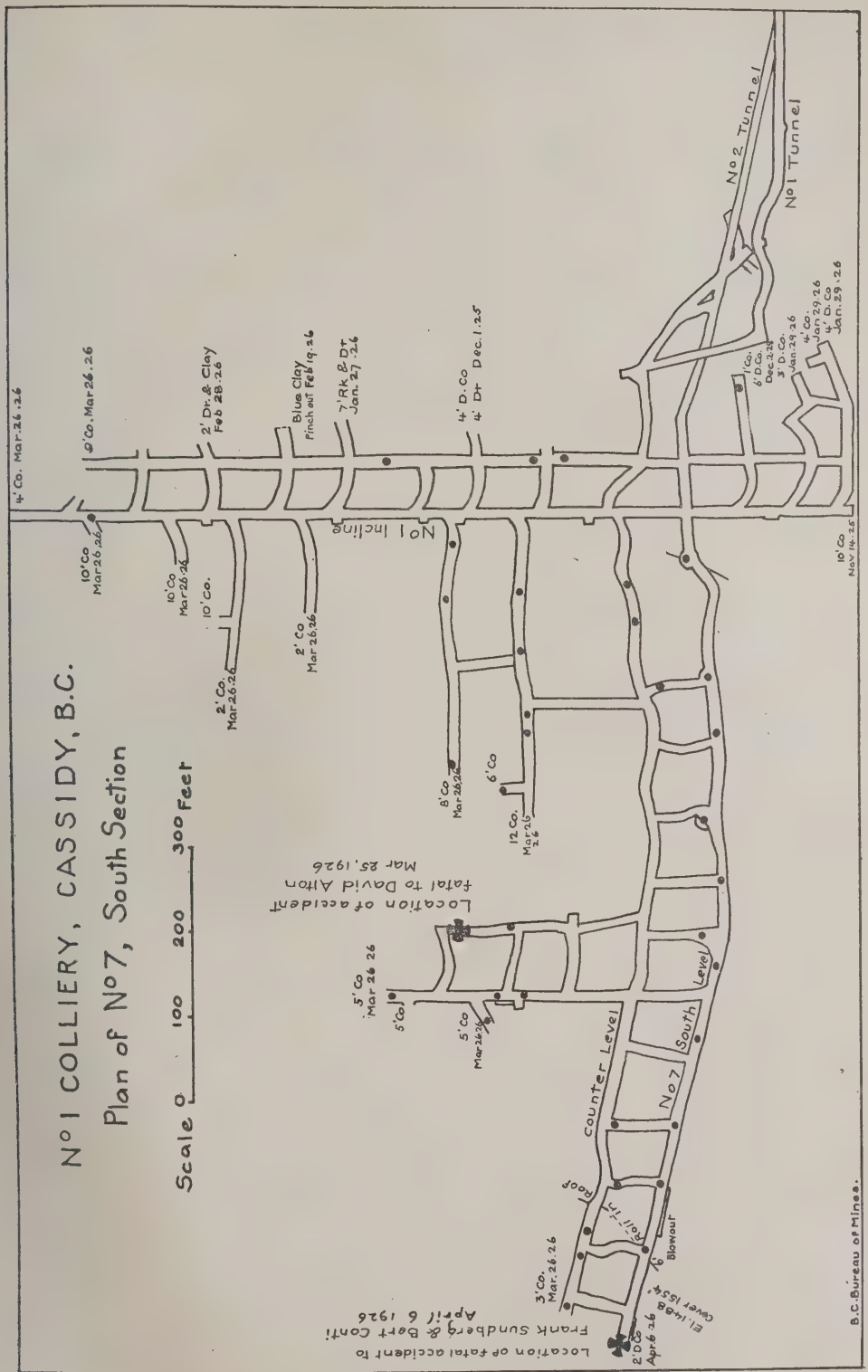
PROSECUTIONS.

During 1926 there were seventeen prosecutions made, sixteen of which resulted in convictions and one in dismissal, with a caution by the Magistrate. Details of the cases are given in a table at the end of this section.

MINE-RESCUE AND TRAINING.

Many holders of certificates of competency in mine-rescue training underwent training during the year at the different stations.

During the year trained teams did valuable work in fire areas in the Middlesboro Collieries at Merritt with the aid of the oxygen apparatus.


No 1 COLLIERY, CASSIDY, B.C.
Plan of No 7, South Section
Scale 0 100 200 300 Feet
No 1 Tunnel
No 2 Tunnel
No 1 Incline
No 7
South Level
Counter Level
Location of accident fatal to David Athon Mar 25, 1926
Location of fatal accident to Frank Sundberg & Bert Conti April 6 1926
B.C. Bureau of Mines.

The following persons took the complete training course and obtained certificates:—

Cert. No.	Name.	Where trained.	Cert. No.	Name.	Where trained.
601	William D. Carson	Ladysmith.	605	John Whittaker	Michel.
602	James Littler	Michel.	606	Andy Smith	Michel.
603	Albert Krall	Michel.	607*	Thomas Branch	Michel.
604	William H. Cartwright	Michel.			

* Substitute for No. 534.

During 1926 there was added to the equipment at the Government Mine-rescue Stations six Burrell All Service Masks and 150 H.H. Inhalators.

There are now kept ready for use at the mines and in the Government Mine-rescue Stations 206 sets of mine-rescue apparatus and resuscitating devices. There has been issued a total of 607 certificates of competency in mine-rescue training and eighteen special certificates to officials physically unfit to stand the training, but who have taken a course of lectures fitting them to handle rescue crews in cases of emergency.

To stimulate interest in this work the Minister of Mines presented a self-rescuer machine to all competitors who took part in the competitions in 1925; a total of 100 self-rescuers being distributed.

The operators and workmen are urged to make further investigation of the possibility of saving lives in the event of mine explosions by extensive use of the self-rescuer.

MINE-RESCUE AND FIRST-AID COMPETITIONS.

The East Kootenay Mine Safety Association held its fifth annual mine-rescue and first-aid contest at the Government Mine-rescue Station, Fernie, on August 7th.

In the mine-rescue competition there were six teams—two from Fernie, two from Coal Creek, and two from Michel. This event was keenly contested, as is evidenced by the fact that while the winning team obtained 99.4 per cent. of the possible marks, the lowest team was rated at 93 per cent. The first prize, the King shield, was retained by the Coal Creek team, captained by John Caufield. In the first-aid competitions (senior) Fernie No. 1 team, captained by Thos. McGuire, won the Department of Mines cup and the Rotary shield with 89 per cent. marks. In the ladies' competitions the Fernie team, under the leadership of Mrs. John Wilson, won the first prize. The junior team from Michel succeeded in retaining the Bonnell and Corson cup, which they won in the previous competition. This team was captained by A. De Luca.

The eleventh annual meet of the Vancouver Island Branch of the British Columbia Mine Safety Association was held at Ladysmith on September 6th, and much credit is due to the Canadian Collieries (Dunsmuir), Limited, and its local representative, T. A. Spruston, for the erection of the mine and use of the grounds. The problems in the mine-rescue meet were prepared by the Mines Department, while the judging of the work of the teams was carried out by George T. Wake, Inspector of Mines for the State of Washington, and H. E. Miard, Inspector of Mines, Fernie.

Seven teams were entered in this event, as follows: Coal Creek (Captain Caufield); Ladysmith (Captain Galloway); Cumberland No. 2 (Captain Woods); Extension (Captain Carson); Nanaimo (Captain Gillis); Cumberland No. 1 (Captain Williams); and Cassidy (Captain Hogan). The Coal Creek, Cassidy, and Nanaimo teams used the Gibbs apparatus, while the other teams used the Paul machine. The first prize was won by the Coal Creek team; this is the team which was also successful in taking first place in the Fernie competition. The second and third prizes were won by Extension and Cumberland respectively.

The different first-aid events were keenly contested and were won as follows: B.C. Department of Mines cup by Extension team, with Nanaimo No. 2 team as a close second; the Coulson cup was won by Cumberland No. 1 team, followed by Nanaimo No. 1 team for second place.

In the two-man event Watson and Waterford, of Cumberland, won first place, while Hart and Wallis, of Britannia mines, were second; the one-man event was won by Stobbart and Kemp, Nanaimo, and second place by Wallis and North, Britannia mines. In the junior competitions the girls' team from Cassidy won first place and Western Fuel Corporation of Canada's

cup, with Irene Hogan as captain; the Nanaimo team, under Mary Clarke, gained second place. In the ladies' cup the Nanaimo team, under Mrs. Scott, was first, while the second team was captained by Mrs. Turner. The first and second places in the boys' event were won by Nanaimo No. 1 team and Cassidy team respectively.

The prizes were presented by the Honourable William Sloan, Minister of Mines, at the close of the competition.

These two mine-rescue and first-aid competitions, held annually, are made possible by substantial grants from the Department of Mines; in addition, the resources of the different mine-rescue stations are at the service of the meets.

The help of the Instructors at the different stations is also an important factor in the intensive training of the teams.

In May the late George Wilkinson, Chief Inspector of Mines, James Dickson, H. E. Miard, and J. D. Stewart, of the Mines Department, at the request of the Washington State authorities, went to Burnett, Wash., to act as judges of the mine-rescue contest held at that place by the mining companies of Western Washington.

EXAMINATIONS FOR CERTIFICATES OF COMPETENCY.

Two examinations for certificates of competency for coal-mine officials were held during 1926; details of these examinations are dealt with in the report of the Secretary to the Board.

Examinations for certificates of competency as coal-miners were held regularly during 1926 at the various mines.

SUPERVISION OF COAL-MINES.

During 1926 sixteen coal companies operated eighteen collieries, with thirty-five mines, employing 3,757 men underground.

In the supervision of underground employees there were twenty managers, two safety engineers, twenty-seven overmen, 151 firebosses and shotlighters, a total of 200 officials, or one official for every nineteen persons employed underground.

METALLIFEROUS MINES.

Production.

The output from the metalliferous mines for 1926 was 4,775,073 tons, an increase of 925,804 tons over the tonnage for 1925. This tonnage was produced from 138 mines, of which 55 shipped 100 tons or more.

Accidents.

There were nine fatal accidents in and about the metalliferous mines during 1926, an increase of four compared with the figures for 1925.

There were 4,341 persons employed in and about the metalliferous mines in 1926.

The ratio of fatal accidents was 2.07, compared with 0.97 for 1925. The ratio for the last ten-year period was 2.22.

The tonnage mined per fatal accident was 530,564, compared with 769,854 tons per fatal accident for 1925.

The tonnage mined per fatal accident for the last ten-year period was 320,290.

The following table shows the mines at which fatal accidents occurred during 1926 and comparative figures for 1925:—

Mining Division.	Mine.	No. of Accidents.	
		1926.	1925.
Vancouver	Britannia	1	2
Fort Steele	Sullivan	1	1
Slocan	Carnation	1	....
Fort Steele	Stemwinder	1	....
Greenwood	Rambler	1	....
Similkameen	Copper Mountain	1	1
Northern	Hidden Creek	2	....
Lillooet	Pioneer	1	....
Slocan	Bosun	....	1
Totals		9	5

The following table gives the cause and percentage to the whole of the fatal accidents, with corresponding figures for 1925:—

Cause.	1926.		1925.	
	No.	Per Cent.	No.	Per Cent.
By blasting	1	11.11	1	20.00
By falling into chute, raises, winzes, etc.	4	44.44	3	60.00
By falls of ground	2	22.22	....	.....
Miscellaneous (underground)	1	11.11	1	20.00
Miscellaneous (surface)	1	11.12	....	.....
Totals	9	100.00	5	100.00

Details surrounding the occurrence of fatal accidents in and around metalliferous mines during 1926 were:—

The fatal accident which occurred to Robert Smiljanich, machine-miner, in the *Fairview* mine, operated by the Britannia Mining and Smelting Company, on February 9th, 1926, was due to deceased falling into a glory-hole. He was drilling on a bench in the glory-hole in daylight when from some unknown cause he fell from this bench, leaving his machine still running. He was using a new type of machine and a man who was sitting near for the purpose of checking the performance of this machine said deceased appeared to fall forward without any apparent cause and fall into the glory-hole.

The fatal accident which occurred to Edward Carlson, miner, *Hidden Creek* mine, operated by the Granby Consolidated Mining, Smelting, and Power Company, on June 4th was caused by deceased slipping while trying to remove a broken steel from a hole. He fell into a chute and was killed by the fall.

The fatal accident which occurred to Jacob Henson, miner, *Carnation* mine, operated by the Victoria Syndicate, on June 12th was caused by a fall of ground from an unsuspected natural slip.

The fatal accident to Peter Hagberg, miner, in the *Pioneer* mine, operated by D. Sloan and associates, on June 12th was caused by being crushed while in a sinking shaft by a loaded bucket owing to a derangement of the hoisting equipment.

The fatal accident which occurred to Max Botkoryok, miner, *Copper Mountain* mine, operated by the Allenby Copper Company, on August 11th was caused by deceased fainting and falling into a glory-hole on the surface. Deceased and two fellow-miners were walking single file down into the glory-hole, deceased being in the middle. The man behind noticed that Botkoryok appeared to be in distress, but before any one could get hold of him he had fallen over the side and into the glory-hole, with fatal results.

The fatal accident which occurred to Ogilvie Robertson, motorman's helper, on the surface at the *Stemwinder* mine, operated by the Porcupine Goldfields Development and Finance Company, on August 14th was caused by being struck on the head by a crowbar which he was using to loosen the ore in a chute at the bunkers. When the ore was loosened a piece struck one end of the bar and caused the other end to strike deceased.

The fatal accident which occurred to C. Pontoni, miner, at the *Sullivan* mine, operated by Granby Consolidated Mining, Smelting, and Power Company, on October 4th was caused by being carried down a chute with the ore. The ore had hung up and Pontoni and several others had gone into the chute to start the ore running by means of a blast. After placing the charge, and lighting same, the ore started running before deceased could get out of the chute; he was carried some 60 feet to the level below, where his body was recovered before the blast had gone off.

The fatal accident to Vagn Thiesen, miner, *Hidden Creek* mine, operated by the Granby Consolidated Mining, Smelting, and Power Company, on October 10th was caused by being struck by a flying rock from surface blasting some 600 feet away. A warning whistle was blown for some time prior to the blast, but Thiesen failed to take cover and merely turned his back to the direction of the blast. A piece of rock struck him and caused him to fall into a glory-hole.

The fatal accident which occurred to Arne Palojari, mucker, *Rambler* mine, operated under lease by Lawrence & Rinta, on October 26th was caused by a fall of ground in a disused stope.

There was a total of thirty-two accidents reported under the requirements of section 19, "Metalliferous Mines Regulation Act." An analysis of the causes shows that a large percentage of the accidents were preventable had proper care been exercised by the injured persons. Of the nine fatal accidents in and about the metalliferous mines, four occurred to men who were working in daylight.

Ventilation.

The District Inspectors report that the ventilation of the metalliferous mines was fairly well maintained throughout 1926.

Mine-air Sampling.

During 1926, as in previous years, mine-air samples were frequently taken in the metalliferous mines of the Province; much valuable information has been obtained from the samples and added to that previously obtained relative to the hydrogen, carbon-monoxide, and carbon-dioxide contents of the atmosphere in the metalliferous mines.

Mine-rescue Work.

Several of the larger mining companies have installed sets of the Burrell all-service gas-masks for emergency use in case of fires or dealing with noxious gases.

First-aid Work.

Many of the employees of the more important mining companies have taken first-aid training during 1926 and in some instances competitions have been held to widen the interest in this work.

Conclusion.

I desire to express my appreciation of the faithful co-operation and assistance afforded during the year by the District Inspectors and Instructors in mine-rescue work. I also wish to thank the management and employees at the various collieries for the assistance and support given in making operations as safe as possible and look forward to a continuation of the same during the coming year. It is only by the closest and efficient co-operation of all parties concerned that we can keep down the number of accidents and make the mining industry a safer and more congenial occupation.

I am much indebted to the Director of the Mines Branch at Ottawa for co-operation in the work of mine-air sampling, and the Dominion Government for furnishing the sample-bottles and making all analyses free of charge.

REPORTS OF METALLIFEROUS MINES INSPECTORS.

NORTHERN INSPECTION DISTRICT.

Report by T. J. Shenton, Inspector.

I have the honour to submit my annual report for the year 1926 for the Northern Inspection District, including the following Mining Divisions: Atlin, Portland Canal, Nass River, Omineca, Queen Charlotte, and Skeena.

ATLIN MINING DIVISION.

Engineer.—This mine is operated by the Engineer Gold Mines Company, Limited, under the managership of A. C. Brinker. During 1926 an average of 100 men was employed and the operations were carried on throughout the year without serious accident to any employees. There is a resident medical practitioner at this mine and during my last inspection I found the operations in accord with the "Metalliferous Mines Regulation Act."

Gleaner.—There were two men employed at this mine during the early part of the year, no work being done after the month of June. The requirements of the "Metalliferous Mines Regulation Act" were well adhered to.

Taku Arm.—An average of ten men was employed during the year under T. Oxley, superintendent, and the operation was in accordance with the "Metalliferous Mines Regulation Act."

Atlin Silver Mine.—At the time of my last inspection fourteen men were employed underground and general conditions were well in accordance with the "Metalliferous Mines Regulation Act."

PORTLAND CANAL MINING DIVISION.

Salmon River Section.

Premier Extension.—This mine is operated by the Alaska Canadian Mining Company and at the time of my last visit employed three men. General conditions were found to be good.

Silver Crest.—Four men were employed on the occasion of my last visit, when general conditions were found to be good.

Silver Tip.—This mine is operated by the Silver Tip Mining Syndicate, Limited, and on my last visit I found seven men employed underground. General conditions were found to be satisfactory.

Big Missouri.—This property is operated by the Big Missouri Mining Company, with S. Petersen as superintendent. An average of twenty men has been employed throughout the year. Work has been carried on by tunnels and raises with the addition of diamond-drilling. General conditions of ventilation, timbering, and accommodation for employees were found to meet the requirements of the "Metalliferous Mines Regulation Act."

National Silver.—This mine is operated by the Sebakwe District Mines, Limited, and was opened in April. A 65-horse-power Diesel engine was installed and tunnelling to the extent of 900 feet completed. General conditions were found to be good.

B.C. Silver.—Operated by the B.C. Silver Mines, Limited; C. A. Banks, general manager; C. B. North, superintendent. This mine employs seventy-five men. During the year a 100-horse-power Diesel engine and Sullivan compressor of 1,050 cubic feet capacity have been installed, while the mine haulage has been improved by the addition of Mancha storage-battery locomotives. Satisfactory improvements have been made to the accommodations for the employees and the general operations found to meet the requirements of the "Metalliferous Mines Regulation Act."

Premier.—Operated by the Premier Gold Mining Company, Limited; D. L. Pitt, general manager; B. Smith, assistant general manager; and H. MacDonald, mine superintendent. The mine operated continuously during 1926, while a considerable amount of new machinery was installed during the year and the capacity of the mill was greatly increased. The general conditions in the mine were found to be satisfactory and in accordance with the "Metalliferous Mines Regulation Act."

Bear River Section.

Dunwell.—Operated by the Dunwell Mines, Limited; R. M. Stewart, president and managing director; T. S. McPherson, vice-president; M. Little, mine superintendent. An average of thirty men was employed underground during the year and about thirty-five men on construction-work on the surface, principally on the new mill and power plant. New ore-bins at the mine have been completed and all the towers for the aerial tram-line are in place, and general improvements have been carried out in the camp building to provide better accommodation for the employees.

Three Burrell all-service gas-masks have been purchased for use in case of emergencies underground. In my different inspections I have found this operation to be conducted in accordance with the "Metalliferous Mines Regulation Act."

Independence.—Operated by the Independence Gold Mine Company, Limited; S. Fitzgerald, managing director; J. Fitzgerald, mine superintendent. There were six men employed in this mine at the time of my last inspection and general conditions were good.

L. & L.—Operated by the L. & L. Glacier Creek Mines, Limited; J. Thomey, superintendent. There were six men employed at the time of my last visit and the workings and accommodations were found in a satisfactory condition.

Silverado.—Operated by the Silverado Mines, Limited; J. J. Haahti, mine superintendent. There were six men employed at this mine until September, when work was suspended for the remainder of the year.

Marmot Section.

Porter-Idaho.—Operated by the Porter-Idaho Mining Company, Limited; C. Porter, general manager. There was a small crew of men employed during the year; general conditions were found to be satisfactory.

Marmot Metal.—Operated by Marmot Metal Mining Company, Limited; A. A. McDonald, mine foreman. There were three men employed in this operation, which was in a satisfactory condition.

Washington.—Operated by the Washington Mining Company, Limited; G. Lunvall, superintendent. There were six men employed at the time of my last visit and the timbering, ventilation, and camp accommodations were found to be satisfactory.

Portland Canal Section.

Outsider.—Operated by the Granby Consolidated Mining, Smelting, and Power Company, Limited; J. M. McDonald, superintendent. The average number of men employed is forty. In my different inspections during 1926 I found general conditions to be satisfactory.

NASS RIVER MINING DIVISION.

Observatory Inlet Section.

Golskiesh.—Operated by the Granby Consolidated Mining, Smelting, and Power Company, Limited; C. H. Bocking, general manager; W. R. Lindsay, general superintendent; J. D. Ferguson, mine superintendent. This mine was worked continuously during 1926; eighteen men were employed during the latter part of the year. This operation produces silica, which is used in the company's smelting operation at Anyox. The general conditions were found to be very satisfactory and in accordance with the "Metalliferous Mines Regulation Act."

Hidden Creek.—Operated by the Granby Consolidated Mining, Smelting, and Power Company, Limited; W. R. Lindsay, mine superintendent; I. C. Cooke, assistant superintendent; A. Swanson, mine foreman. This mine is the largest in operation in this district; the average number of men employed was 340 a day; and the output was 1,200,000 tons. During the year 530 tons of explosives was used in this mine. Efficient training in first aid was given by J. W. Lang, resident doctor; most of the officials and many of the men have qualified for the St. John first-aid certificate.

A crew trained in the use of rescue apparatus is maintained to deal with emergencies that may require the use of this machine. The apparatus used is the Paul. An accident-prevention committee, consisting of the officials and men from each section of the mine, meet to discuss and recommend safety measures.

The general conditions in this operation were found to be satisfactory and in accordance with the requirements of the "Metalliferous Mines Regulation Act."

Alice Arm Section.

Toric.—Operated by the Toric Mines Company, Limited; A. C. Gerhardi, manager. A small amount of work was done in this mine early in the year, but the greater part of 1926 was taken up with mill-construction. This operation was found to be in accordance with the "Metalliferous Mines Regulation Act."

La Rose.—Operated by the La Rose Mining Company, Limited; Neil Forbes, manager. This operation employed six men until November, when the mine closed down for the year.

Esperanza.—Operated by A. Armour, of Anyox, and J. F. Fraser, of Alice Arm. This mine was operated during the first half of 1926. The timbering in this mine was found to be unsatisfactory and it was requested that no further work be done until this was rectified; other conditions were found to be satisfactory.

Keystone.—Operated by the Keystone Mining Company, Limited; R. E. Griffiths, manager. A new camp was built and work commenced in May and was continued until the end of October, when the operations ceased for the year. General conditions in this mine were found to be in accordance with the requirements of the "Metalliferous Mines Regulation Act."

Wolfe No. 2.—Operated by J. Stark, Alice Arm.; J. Fiva, mine foreman. There were three men employed at this mine until operations were stopped in November for the remainder of the year.

OMINECA MINING DIVISION.

Red Top.—Operated under bond to the Standard Silver Lead Company; F. H. Taylor, owner. There were four men employed in this mine at the time of inspection; general conditions were found to be satisfactory.

Cassiar Crown.—Operated by the Cassiar Crown Mining Company; W. G. Harris, manager. There were nine men employed in this mine at the time of my inspection. A new camp has been built and a 2-drill compressor was in course of installation. General conditions were found to meet the requirements of the "Metalliferous Mines Regulation Act."

Henderson.—Operated by J. F. Duthie, Seattle, Wash.; J. R. Turner, manager; A. Nelson, mine foreman. This property is located on Hudson Bay mountain and is 16 miles from Smithers, the ore being hauled this distance by motor-trucks to the railway. The average number of men employed throughout the year was thirty-five. The general conditions during the different inspections were found to be good.

Sunrise and Silver Cup.—Operated by W. S. Harris, New Hazelton. These mines are under the same ownership and are located on Nine-mile mountain and are about 11 miles from New Hazelton. These mines worked, with eight men, from May to October, when operations ceased for the year. The general conditions at above mines were satisfactory.

Cordillera.—Operated by the Kitselas Copper Mountain Company, Limited. This mine is situated about a mile west of Usk. The workings were found to be in good condition generally.

Little Beaver.—Operated by Hopper Davis Syndicate; H. W. Davies, managing director; J. M. Hoar, mine superintendent. This mine is situated 27 miles from Terrace and at the time of inspection employed seven men. General working conditions were found to be satisfactory.

QUEEN CHARLOTTE MINING DIVISION.

Owing to the information received that very little mining developments were being carried on it was considered unnecessary to visit this Division during the year.

SKEENA MINING DIVISION.

Trixie.—Operated by F. T. Patterson. This mine is situated on Porcher island, about 35 miles from Prince Rupert. The timbering in this mine was found to be unsatisfactory. Steps were taken to have this rectified. Other conditions were satisfactory.

Surf Inlet and Pugsley.—These mines are owned by the Belmont-Surf Inlet Mines, Limited. F. H. Penn, manager; J. Matson, mine foreman. The *Pugsley* mine was closed on April 9th, 1926, and the *Surf Inlet* mine on June 23rd, and a large part of the mill machinery and power plant at the mine was dismantled. The hydro-electric plant at the beach was kept intact.

SOUTHERN COAST INSPECTION DISTRICT.

REPORT BY T. R. JACKSON, INSPECTOR OF MINES.

I have the honour to submit my annual report as Inspector of Metalliferous Mines for the Southern Coast Inspection District for the year 1926.

Britannia Mining and Smelting Co.—C. P. Browning, general manager; James I. Moore, superintendent; C. V. Brennan, assistant superintendent; John Sleeman, mine foreman. The mines operated by this company are situated near Howe sound, about 35 miles north of Vancouver, and are several miles inland. The bulk of the ore is transported between the main tunnel of the mine (2,200-foot level) and the mill, which is on the tide-water, by means of electric-locomotive haulage; the difference in elevation is overcome partly by a 3-per-cent. grade on 3½ miles of haulage-track, and the remainder by means of a 1,400-foot transfer-shaft into which the ore is discharged and reloaded on another electric haulage-train at the bottom. This lower tunnel is 4,000 feet long and the portal is a few hundred feet from the mill and at an elevation which permits the ore to be discharged into the storage-bins of the mill.

There are approximately 1,000 men employed in the various departments of the mine, mill, and transportation. One fatal accident occurred during the year. B. T. Smiljanich, miner, was fatally injured, February 9th, 1926, by having the base of his skull fractured from a fall from the Frank glory-hole at 450-foot level to the Morrison slope at 700-foot level. He was dead when picked up.

During the year the driving of working-places totalled 20,287 feet and diamond-drilling totalled 10,909 feet. A certain portion of the surface was prospected by electrical survey, carried on by the Swedish American Corporation. In order to economically mine ore in the *Bluff* extension to the west a haulage-tunnel which was started years ago at the elevation head of the incline was extended towards the mine. When this is completed and holed through in April, 1927, it will afford transportation of all of mine production to the Beach mill without going over the surface electrical railway at the mine camp. This will greatly facilitate transportation conditions, especially so in the winter, when heavy snow often causes some embarrassment. The work at the *Fair West* section east of the *Victoria* mine was discontinued in the fall and the equipment removed.

The bonus system for a major portion of the underground employees continues to work satisfactorily. An intensive safety campaign is carried on continuously in order to reduce and prevent accidents, both underground and on the surface. As members of the National Safety Council, excellent literature and posters are used throughout the workings and camps, and during 1927 it is proposed to carry out a scheme of safety bonus as a further incentive to individuals to work safely at all times.

Group insurance for all employees was inaugurated during the year, this insurance being carried entirely by the company, with no expense to the employees. After an employee has been in continuous service for six months his life is insured for $500, and if he continues his insurance is increased $200 each six months until he is covered by a maximum of $1,500 in three years. The employees seem to appreciate this insurance plan, and it is believed that it has considerable to do with keeping the turn-over low, which is an aid to safe practices and efficiency.

When inspected during 1926 the various workings were well ventilated and timbered. Safety-first measures introduced by the company officials were carefully carried out by the workmen, and the officials carried out their duties in accordance with the provisions of the "Metalliferous Mines Regulation Act."

Clayburn Co., Ltd.—Head office, Vancouver; J. W. Ball, manager; Edward Wilkinson, mine manager. This company's factory and mines are situated about 50 miles east of Vancouver. The mines are at Straiton and Kilgard. The total tonnage of clay mined underground during the past year was 27,133 tons and from the open workings 2,368 tons. During the year twenty-three men were employed in these mines. A 30-horse-power electric hoist is in use at the Fireclay mine, the other mines being operated by hand.

The clay is hauled to the factory at Clayburn, a distance of 3½ miles, by an electric motor with a crew of two men. From the Kilgard bunkers an endless-rope and gravity system is used to lower the clay down to the chutes, a distance of about 2,500 feet. The mines were found to be well ventilated and in safe condition.

NICOLA-PRINCETON INSPECTION DISTRICT.

REPORT BY JOHN G. BIGGS, INSPECTOR.

I have the honour to submit my annual report as Inspector of the metalliferous mines operating in the Nicola-Princeton Inspection District for the year ended 1926.

Iron Mask.—A. E. Wallinder, superintendent; Joseph Fisher, foreman. This company is operating a group of mineral claims situated 7 miles south-west of the city of Kamloops and consists of shaft operations. The main working-shaft is known as the *Iron Mask* and follows the ore-body down a distance of 750 feet to the lower level, which is connected by a drift on this level with the *Erin*, situated 700 feet east, which is provided with a manway and produces the necessary ventilation.

During 1926 there has been a considerable amount of drifting done off the lower level, which has been entirely of an exploratory nature for the purpose of proving other ore-bodies. These roads have been driven with a small sectional area, well barred down, and cleaned and timbered where required.

The provisions of the "Metalliferous Mines Regulation Act" have been well adhered to. Good accommodation has been provided for the employees and the cook-house, bunk-house, and wash-rooms are in a sanitary condition.

Copper Mountain.—John McLaughan, superintendent; Steve Swanson, mine foreman. This mine is situated in the Similkameen Mining Division, 12 miles from the town of Princeton. It has been in active operation during the whole of 1926 and has been developed with a view of producing a large tonnage by three large and well-maintained levels entering the side of the mountain and extending a distance of several thousand feet. The chief operations are conducted on the No. 2 level, where the ore is loaded into the mine-cars at the foot of the various chutes and gathered by trolley locomotives and hauled to a spiral chute connecting the Nos. 2 and 3 levels, where the cars are dumped by automatic arrangement. The ore is again loaded into mine-car trips on the No. 3 level and taken to the surface in trips by an electric trolley locomotive and dumped into a large crusher-bin. Descriptions have been given in previous reports of this mine by the Resident Engineer and the Inspection Department.

For the purpose of maintaining a large ore reserve an aggressive policy of development has been followed during 1926 by way of diamond-drilling, both at the surface and underground, while not only the branch drifts but the main levels have been extended and raises holed through to the surface, where glory-holes have been developed; six of which are at present in operation.

The mine is well supervised and attention given to maintain a high standard as regards safety to the employees. The roads are wide and well provided with electric lights. The block system of signals is used on the main haulage and is strictly adhered to, and not only the motor but the rear of the ore-trains are provided with spot-lights; signals operated by compressed air are provided at the surface and are used to warn employees when blasting is about to take place in the glory-holes. A well-equipped first-aid room is provided, steam-heated, and under the supervision of a qualified man.

The accommodation of the employees is well provided for by a large steam-heated rooming-house, while a well-furnished mess-house with a large seating capacity is in use at the mine.

Inspections have shown the scaling and barring of the stope walls and roof well barred down by a staff of experienced men employed for this purpose and the provisions of the "Metalliferous Mines Regulation Act" well adhered to.

Coronation.—David Sloan, superintendent; Malcom McGregor, foreman. Situated 1 mile south of the *Pioneer* and after being idle for a number of years was taken over by Vancouver interests during the year 1925, which resulted at that time in hauling in the necessary supplies and material, which chiefly consisted of a large supply of fuel-oil, a 60-horse-power Fairbanks Diesel engine, and a 360-cubic-foot belt-driven single-stage air-compressor. This was used for providing power for a small hoist and the drilling-machines and was installed during 1925.

Work commenced during December, 1925, on a 2-compartment shaft which was sunk a distance of 200 feet and a fair amount of drifting done on the ore at each side of the shaft, when work was suspended underground in September, 1926, and preparations were made for the installation of a mill which will be operated by water-power from Cadwallader creek by a 140-horse-power turbine. When last visited, 920 feet of 3-foot wooden conduit was being freighted to this property, while sixteen men were employed above ground, chiefly engaged in construction-work.

The general conditions of this camp were found to be good and the provisions of the "Metalliferous Mines Regulation Act" well adhered to.

Pioneer.—David Sloan, superintendent. Situated in the Bridge River district, 50 miles north of the Pacific Great Eastern Railway, and accessible by a wagon-road from Shalath, a station situated a few miles west of the town of Lillooet. Hydro-power derived from Cadwallader creek, which flows in close proximity to the mine, is used for operating, but as a result of freezing operations are generally suspended a few months during the winter.

Work was commenced during March, 1926, with an aggressive policy of development outlined, the shaft being sunk a further distance of 160 feet to the 600-foot level and a fair amount of drifting and stoping done on this level.

A 4 by 5 flume 1,700 feet in length is installed at a dam in the creek above the mine, which follows the north bank of the river to the mill, where a 40-foot head of water is produced, operating a 170-horse-power turbine generator which provides power for the mill machinery. Two single-stage air-compressors having an aggregate capacity of 600 feet of free air a minute is the power used for driving the hoists, pumps, and machine-drills at the mine.

A new addition was made to the camp buildings during 1926 which greatly improved the accommodations. When last visited nine men were employed underground and working on the two-shift system. General conditions of the mine were fairly good, the provisions required by the "Metalliferous Mines Regulation Act" well adhered to, and every endeavour made to care for the safety of the employees. The cook-house and the sleeping-apartments appeared to be satisfactory and in a sanitary condition.

Horn Silver.—George Shepherd, superintendent; Elwood Bromley, mine foreman. Situated 15 miles south of the town of Keremeos and accessible from the main highway leading to the International Boundary. It consists of two adits entering the side of the mountain at an elevation of 2,400 feet and 1,600 feet above the camp, where the mill is located, the ore being transported by a gravity overhead tram 3,000 feet in length.

During the early part of 1926 work was concentrated on the installation of the mill and a power plant was completed and commenced operations during April. The chief source of power consists of a 60-horse-power Petter's Diesel engine coupled by belt gearing to the mill machinery, also a belt-driven single-stage air-compressor which provided power for the mining-machines, being conducted through a 3-inch pipe laid up the side of the mountain, a distance of some 3,000 feet.

These operations are small and when last visited eight men were employed at the mine. The general conditions were good, satisfactory accommodations being provided for the employees, the camp buildings being in a sanitary condition, and the "Metalliferous Mines Regulation Act" complied with.

Nickel Plate.—G. P. Jones, general manager; Wallace Knowles, superintendent. Situated on the Nickel Plate mountain and accessible from the town of Hedley, where the mill and the power plant are situated. The ore, being in an andesite gangue, is of a very hard nature and as a result little timber is required in these operations. A 2,000-horse-power hydro-electric power plant, situated on the Similkameen river, 1 mile below the town of Hedley, provides power for these operations.

Work was suspended during the winter of 1925 and commenced during March, 1926. Owing to the small flow of water in the river this company found it necessary to revert to steam-power during August, when actual mining was gradually suspended and recourse made to loading out the loose ore from the foot of the stopes for the purpose of providing mill-feed. The steam-power was continued until October, when the water in the river commenced to rise, and as a result general mining operations recommenced by the hydro-power until December, but owing to ice conditions in the river operations were again discontinued for the balance of the year.

Good accommodation is provided for the employees at the mine and during inspections the provisions of the "Metalliferous Mines Regulation Act" were found well complied with.

Homestake.—W. L. Bell, superintendent; A. Kiedler, mine foreman. Situated several hundred feet above the road passing through Sinmax valley from Louis creek, situated in the North Thompson district, to Squam bay. It consists of an adit-level entering the side of the hill and operating on silver-lead ore overlaid with a thinly laminated talc-schist, which, being of a friable nature, requires careful timbering. Eighteen men were employed underground and the mine was operating on the two-shift system. The roof conditions appeared to be well attended to and timbered across the face with framed sets well lagged above.

The ore is trammed by hand from the mine to an ore-bin situated some distance from the entrance, where it is loaded into skips operating on a gravity-tram 960 feet in length. It is automatically dumped into an ore-bin situated at the foot of this incline, loaded into auto-trucks, and transported a distance of 21 miles to the Louis Creek Station. The only power used at the mine consists of a single-stage 8 by 9 compressor, belt-driven by a gas-engine situated a little below the entrance to the mine, and used for operating the machine-drills.

The camp accommodations situated at the foot of the hill appeared satisfactory and provisions of the "Metalliferous Mines Regulation Act" complied with.

Enterprise.—R. J. Grant, superintendent. Situated a short distance west of the Merritt–Kamloops highway and about 30 miles from Merritt, operating the *Enterprise* mining claim, which was formerly known as the *Star*, the work generally being of a prospective nature for the purpose of developing a mine on this property. New camp buildings in close proximity to the mine have been erected, consisting of a large commodious rooming-house, cook-house, and dining-room, which provides good accommodation for the employees.

Operations have been continuous during 1926. The ore, which is found to be dipping into the side of the hill at an angle of about 60°, is being developed by an inclined shaft, which has been extended a distance of about 230 feet from the surface, with levels driven off from the shaft north and south.

The power plant consists of a 25-horse-power Scandia distillate-engine coupled to a belt-driven single-stage compressor having a capacity of 125 feet of free air a minute, which is used for the air-drills, small pump, and ventilating-fan. This air is conducted to the face of the slope by means of a 6-inch galvanized air-line.

The material is drawn from this 2-compartment shaft by a bucket travelling on a skidway by a ⅝-inch cable passing over a wheel installed above the shaft head-frame and dumped into an ore-bin. It is operated by an 8-horse-power Fairbanks loose drum-hoist provided with a clutch and wood-lined brake. Ten men were employed around this mine, five of which were employed underground.

General conditions in and around this mine were found to be very good and the provisions of the "Metalliferous Mines Regulation Act" well adhered to.

WEST KOOTENAY AND BOUNDARY DISTRICTS.

Report by H. H. Johnstone, Inspector.

I have the honour to submit my annual report as Inspector of Metalliferous Mines for West Kootenay and Boundary Districts for the year 1926.

During the year fifty-four different properties were inspected and 150 visits of inspection made.

TRAIL CREEK MINING DIVISION.

The Rossland properties, operated by the Consolidated Mining and Smelting Company, during 1926 included the *Centre Star*, *Le Roi*, and *Josie* mines. An average force of 103 men, under the superintendency of F. S. Peters, was employed during 1926 in development and production.

The *Velvet-Portland*, owned and operated by a local syndicate, completed their long drainage-tunnel, which was a complete success as regards the drainage of the mine. Very little work was done subsequent to this completion of the tunnel and work was discontinued early in 1926.

The *I.X.L.*, *O.K.*, and *Midnight* properties in the free-gold belt south-west from Rossland, on Little Sheep creek, were operated by small forces of leasers. The lessees on the *I.X.L.*, after a long period of successful operation, did a lot of prospecting by drifting and diamond-drilling. This did not prove of an encouraging nature and they abandoned their lease. The *O.K.* and *Midnight* leasers operated throughout the year.

NELSON MINING DIVISION.

The *Yankee Girl*, at Ymir, is operated by the Yankee Girl, Limited, with W. G. Norrie as superintendent. An average force of twenty-eight men was employed. A large tonnage was shipped to Trail.

The *Goodenough*, situated on Wildhorse creek, was operated by the Porcupine Goldfields Development and Finance Company, Limited, for the greater part of 1926 with an average force

of eighteen men. A fair tonnage of ore was shipped to Trail, operations being discontinued in October. There is a strong probability of work being started on this property by another company during 1927.

The *Hunter V.*, on Porcupine creek, owned and operated by the Consolidated Mining and Smelting Company, was under development. After the completion of a long raise to connect with the upper workings the mine is now in a position to resume shipments. A force of nine men was employed under W. J. Turner, superintendent.

The *Emerald* was operated for a short time on development and diamond-drill work.

The *H.B.*, situated on Deer creek, was operated throughout the year by the Victoria Syndicate, Limited. An average force of twenty-two men was employed under the superintendency of M. O'Donnell.

The *Queen* was operated for a short time under lease.

The McDonald property and the Reeves property, on the Pend d'Orielle river, after being tested in a thorough manner with diamond-drills by the Victoria Syndicate, Limited, were operated on a programme of development by that corporation. An average of ten men was employed on the McDonald and twenty-one men on the Reeves, under H. Gamble, superintendent.

The *Beaver*, at Ross spur, was operated part of 1926. A crosscut tunnel was driven to cut the vein and some drifting done on the vein.

The *Howard*, on Porcupine creek, is an old property that has been reopened during 1926, twelve men being employed.

AINSWORTH MINING DIVISION.

The *Bluebell*, at Riondel, was worked continuously throughout 1926, with the exception of short shut-downs due to trouble with the power-house; improvements are under way which will practically eliminate any further trouble from that source. The property is being operated by Fowler & Eastman under a lease from the owning company. Charles F. Sherwin is mine foreman. An average crew of forty-five men was employed.

The *Cork-Province* was operated with a small force during a part of the year under the superintendency of W. E. Zwicky.

The *Gibson* was operated by the Daybreak Mining Company throughout the year with a force of eight men. A gravity-tramway has been installed and prospects of shipments from this property in 1927 are good.

The *Whitewater-Deep* was operated continuously with an average of twenty-eight men. Numerous improvements have been made in and about the property.

SLOCAN MINING DIVISION.

The *Slocan Star*, owned and operated by the Silversmith Mines, Limited (O. V. White, superintendent), was worked continuously with an average of seventy men. Milling and shipment of ore and concentrates were discontinued in the latter part of 1926 and attention given entirely to development.

The *Ruth-Hope*, operated by the Ruth-Hope Mining Company (J. Hanna, superintendent) was steadily developed on the lower level of the mine, as well as producing ore from the upper levels.

The *Carnation* and *Minnehaha*, operated by the Victoria Syndicate, Limited, were worked continuously on development during 1926, the *Carnation* with an average of sixteen men and the *Minnehaha* with eight men. A. L. MacPhee had charge of both properties. On the *Carnation* a long tunnel is being driven from the Sandon side of the divide to the Silverton side on 4-Mile creek. The expectation is that this tunnel, connecting two of the principal ore-producing districts of the Slocan, will be completed about April, 1927.

The *Wonderful*, owned and operated by Clarence Cunningham, has been worked with a small crew.

The *Corinth* was also worked with a small crew on development.

The *McAllister*, operated by the Slocan Silver Mines, Limited, a subsidiary of the Standard Silver Lead Mining Company (W. H. North, superintendent), was worked with twenty-two men till the slump in silver, when it was closed down. In all probability operations will be resumed in the spring of 1927.

The *Molly Hughes* was operated spasmodically by different managements and was finally closed down towards the end of 1926.

The *Bosun*, operated by the Rosebery-Surprise Mining Company (J. P. MacFadden, superintendent), was worked with seventeen men throughout the year.

The *Galena Farm* was operated by the Porcupine Goldfields Development and Finance Company, Limited, under lease and bond. Quite a large amount of development-work was done by machine-drills and diamond-drills, but the bond was finally relinquished. Since that time the property has been worked by leasers.

The *Hewitt* was operated by the Victoria Syndicate, Limited; R. H. Stewart, manager; W. Tattrie, superintendent. A crew of thirty-one men worked on development.

The *Van Roi*, owned and operated by Clarence Cunningham, was operated for a part of 1926 with a crew of thirteen men.

The *Mammoth*, operated under lease and bond by the Porcupine Goldfields Development and Finance Company, employed a crew of seventeen men on development.

The *Rambler-Cariboo* was operated by leasers.

The *Enterprise*, on 10-Mile creek, was operated by McGuire & Wragge, seven men being employed.

The *American Boy* was operated by a small crew on development-work.

The *Noble Five*, after being closed for a number of years, was reopened in October, 1926, by Paul Lincoln under lease from the Dunsmuir Estate.

The *Noonday*, another property that has been idle for a number of years, was again opened. The Leadsmith Mines, Limited, now operating the property, has embarked on an extensive scheme of development.

The *Lucky Jim* was operated continuously by the Lucky Jim Lead and Zinc Mining Company; A. G. Larson, manager; M. Ulrilla, superintendent. A crew of twenty-seven men was employed.

TROUT LAKE, LARDEAU, AND REVELSTOKE MINING DIVISIONS.

The *Multiplex*, situated on Poole creek, was operated by the Multiplex Mining, Milling, and Power Company; O. T. Bibb, superintendent. Nineteen men were employed in and about the mine.

The *Mohican*, on Gainer creek, was worked for part of 1926 by the Mohican Mining Company; C. L. Copp, superintendent. Six men were employed.

The *True Fissure*, on Great Northern mountain, near Ferguson, was operated throughout 1926 by the True Fissure Mining Company; D. Morgan, superintendent.

The *Silver Creek* was operated by the Bernier Metals Company; R. F. Hill, superintendent. Fourteen men were employed.

GREENWOOD MINING DIVISION.

The operations in this district have been principally on Wallace mountain at Beaverdell.

The *Sally* was operated, under option, by the Federal Smelting and Refining Company. The option was relinquished and the property again taken over and operated by the owners, the Wallace Mines, Limited (E. Nordman, superintendent), with a crew of twenty-six men.

The *Bell*, owned by McIntosh & Lee, worked steadily throughout 1926 with a crew of seventeen men.

The *Bounty Fraction* and *Duncan* worked during part of 1926 by the Beaverdell Mines, Limited; G. Timmermeister, superintendent.

The *Tiger* and *Bounty* worked for part of 1926 by the Federal Mining and Smelting Company (S. B. Davis, superintendent) with a crew of eleven men. Operations were discontinued when the Federal Company gave up its option on the *Sally*. The *Tiger* has since been operated by another outfit.

The *Beaver* was operated part of the year with a crew of seven men.

The *Wellington*, operated by the Wellington Syndicate (A. J. Morrison, superintendent), worked continuously with a crew of nine men.

The *Revenge* was operated during part of 1926 with a crew of nine men.

The *Imperial*, at Rock creek, was operated in a small way and was finally optioned by the Hecla Mining Company, which employed a small crew.

The *Elkhorn Fraction*, at Greenwood, was operated during part of 1926 by the Elkhorn Mines, Limited (Roy Clothier, superintendent), eight men being employed.

Two fatal accidents and three of a serious nature happened during 1926.

The managements of the different properties have been, with but few exceptions, desirous of co-operating with the Inspector in all endeavours to make the mines more safe and working conditions better. Any suggestions made by the Inspector have been received in a friendly spirit and, as far as possible, carried out. For this they have the thanks of the Inspector and a desire on his part for a continuance of the same relations.

EAST KOOTENAY, WEST KOOTENAY, AND BOUNDARY INSPECTION DISTRICTS.

REPORT BY ROBERT STRACHAN, SENIOR INSPECTOR.

I have the honour to submit the annual report covering the inspection of metalliferous mines in this district for the year 1926.

For the purposes of inspection the district is divided into two—West Kootenay and Boundary, with H. H. Johnstone as Inspector in charge, with office in Rossland, and East Kootenay, with J. MacDonald as Inspector in charge, with office in Fernie; while the Senior Inspector acts as supervising Inspector for both districts.

WEST KOOTENAY AND BOUNDARY DISTRICT.

Conditions in respect to progress, safety, and health in this district are very well covered in the report attached made by H. H. Johnstone, Inspector of Mines, and show that while the number of workmen employed in the Rossland district has fallen off, due to curtailment on the part of the operating company, this has been rather more than offset by increases in other districts.

EAST KOOTENAY DISTRICT.

In this district nine mines came under inspection, as compared with four in 1925, these being the *Sullivan* (upper mine and tunnel); the *Stemwinder*, at Kimberley; the *Aurora*, at Moyie; the *Alice*, at Creston; the *Globe*, at Skookumchuck; the *Paradise*, at Invermere; the *White Cat*, at Wilmer; and the *Monarch*, at Field.

The *Sullivan*, with E. G. Montgomery as superintendent and M. O'Brien as assistant superintendent, is situated near Kimberley and is owned and operated by the Consolidated Mining and Smelting Company of Canada, Limited.

This is the largest producing mine in the district, averaging over 3,000 tons of ore a day and employing about 800 workmen in and around the mine. The ore mined is a lead-zinc-silver one, with the principal values in the two first named.

The mine is operated in two divisions, the Tunnel district and the Upper district, the latter being the old working first developed, the latter being those connected with the long crosscut tunnel driven to reach the ore at depth.

In the Tunnel district all the operations are on a larger scale, tracks, loading equipment, etc., and from here a considerable amount of the ore from the Upper workings is handled. This ore is brought down a chute, which connects the Upper workings and the Tunnel.

Two separate raises or chutes connect the Tunnel and the Upper workings; these are situated so as to facilitate the handling of the ore and assist the ventilation of the mine. The latest connection made has four separate compartments or shafts, each being separated by a concrete bulk-head, while the sides are protected by the same material, landings are provided at intervals, and cages used to transport men and material.

With the many descriptions already given of this mine, and especially that given by A. G. Langley, Resident Mining Engineer, it is unnecessary to again describe it, as these previous reports are all available for reference.

The production of ore has remained very high all year, being limited only by the capacity of the concentrator, and even at that some has been shipped to the recently erected concentrator at Moyie. This was necessary owing to the delay in enlarging the Kimberley concentrator, due to the inability of securing the necessary machinery. The equipment used in the production of

ore is practically the same as last year, except that the Tunnel has been laid with 80-lb. steel rails and 24-ton locomotives have been installed. This provides for a greater load being hauled out and allows for a fairly large margin, so that the production can be increased as the requirement arises.

No increase was made in the power-house during 1926 and power is still obtained from the East Kootenay Power Company. Accommodation for employees in the McDougal townsite continues to grow, keeping pace with the increasing force of workmen, and during 1926 a $60,000 recreation-hall has been provided for this camp. At the Upper camp, Sullivan hill, a recreation-hall costing $15,000 has been erected for the workmen there and a similar one at the concentrator.

Relations between employees and the company have been very cordial, and it is very much doubted if there could be found anywhere a more earnest attempt to maintain good relations with their employees than is made here.

During the inspections of this mine it is found the conditions with respect to safety and health are maintained at a very high standard, and the attitude of the officials is such that their every endeavour is to comply with the requirements of the "Metalliferous Mines Regulation Act" and every suggestion tending to greater safety.

The *Stemwinder*, situated on Mark creek, on the other side and a little farther up than the tunnel of the *Sullivan*, is operated by the Porcupine Goldfields Development and Finance Company, Limited, with R. V. Neily as superintendent.

As in 1925, the principal work was in connection with sinking the shaft and developing, and in the latter part of 1926 a considerable surface area was stripped, exposing the mineral.

The ore mined is practically similar to the *Sullivan* ore—lead, zinc, and silver—and during 1926 a considerable amount was shipped to Trail smelter.

An average of about forty workmen was employed during the year.

Power for hoisting, sinking, and other purposes is obtained from the East Kootenay Power Company. No bunk or cook houses are maintained, all the workmen residing in the town of Kimberley, and a fairly good change-room is maintained at the mine for their use.

Conditions in relation to safety and health have generally been found very good during the year and the "Metalliferous Mines Regulation Act" well complied with.

The *Paradise*, situated about 20 miles out from Invermere, in the Windermere valley, in Paradise basin, is reached by a wagon-road following Toby and Spring creeks.

The mine is owned by the Hon. Robert Randolph Bruce, Lieutenant-Governor of the Province, but at the end of the summer was leased to R. Stewart on behalf of the Victoria Syndicate, Limited. Robert McDonald, who has been manager for Mr. Bruce for many years, is still in charge of the mine.

The ore mined is lead and silver, generally in the form of carbonates, but recent developments have revealed a fairly large body of sulphide ore. This has necessitated the installation of a small oil-driven power plant for exploration and development purposes.

About twenty men have been employed during the year, all of whom reside in the bunk-houses provided by the company.

On visits of inspection it is generally found that both the bunk-house and the cook-house are in fairly good condition, clean and sanitary.

The *Globe* is situated on Copper creek, or rather between Copper creek and Skookumchuck creek, 5 miles from Torrent Station, on the Kootenay Central Railway.

The work here consists mostly of development and only about six workmen were employed. The ore contains grey copper with silver and lead values, and so no great quantity of ore has been shipped, apart from sampling.

Conditions at the mine were fairly good with respect to safety and health and fairly good cook and bunk houses are maintained for the workmen. D. A. McIntosh is in charge of the work.

The *White Cat* is situated in the Windermere district, on Slade creek, about 24 miles from Windermere Station. The work consists of prospecting several outcrops of ore, lead, silver, and very small zinc contents. These outcrops are situated at the side of a steep snowslide gulch, above which hangs a fairly large glacier.

Two short tunnels have been driven and some open trenches cut; a short gravity-tram bringing the ore down to the creek-bottom, from where it is hauled by a stone-boat to the camp, about 1½ miles, and from there to the railway by teams.

Six men were employed at the time of visiting and the conditions with respect to health and safety were fairly good. Fairly good accommodation is maintained for the workmen, both as

regards bunk-house and cook-house. E. Scott was in charge of the work and the "Metalliferous Mines Regulation Act" reasonably well complied with.

The *Aurora* is situated on Moyie lake across from the town of Moyie, and was reopened during 1926 by the Aurora Syndicate, with W. G. Smith as superintendent. About fourteen men were employed, some underground and some on the surface, shipping from the old dumps.

A road has been constructed from Aldridge, a station on the Crowsnest branch, and a considerable amount of ore shipped to Trail, being hauled from the mine to the railway by auto-truck. The ore shipped contains lead, zinc, and silver.

The general conditions in and around the mine were fairly good, most of the workmen residing in the town of Moyie, a cook-house and small bunk-houses providing accommodation for the others. The "Metalliferous Mines Regulation Act" was fairly well complied with.

The *Monarch*, probably one of the oldest in the Province, was reopened during the year by the Pacific Mines Company, with A. W. Davies as superintendent. About twenty men were employed, principally in development-work and in driving a long tunnel to connect the old *Monarch* mine-workings with those of the *New Monarch*, which, besides providing a more direct method of haulage, eliminated a lot of outside climbing, which never seemed very safe and was always difficult.

In October sufficient development-work had been done to satisfy the company and the mine was temporarily abandoned pending future developments.

Conditions in and around the mine were kept fairly good and the requirements of the "Metalliferous Mines Regulation Act" well complied with.

A fairly good camp was established in the flat alongside the Kicking Horse river and almost underneath the *Kicking Horse* claim, where a good bunk-house and cook-house were maintained. The ore mined is silver, lead, and zinc at both places.

Some work was done on the *Kicking Horse* claim, but there was no active work being done at the time of visit. This work was done by the same company as at the *Monarch* mine and under the same management.

INSPECTIONS.

During 1926 more mines were inspected than in 1925, due in a great measure to the new blasting regulations. These regulations came into force on May 15th, 1926, and very little time was lost by the larger operations in putting them into force.

In the smaller operations, due principally to a lack of knowledge, their enforcement was slower, but in every case willingness was shown to comply with them, and gratification is felt with the co-operation shown in every case to comply with them in detail.

Visits of inspection were made to the larger mines almost every month; in the smaller operations less frequently; the existing conditions determining the number of inspections. Where conditions were unsatisfactory, these were pointed out and later visits made to ascertain that they had been remedied. All serious and fatal accidents were investigated and, where possible, inquests on fatal accidents were attended. No provision is made in the "Metalliferous Mines Regulation Act" for notice of these inquests to be sent to the Inspector of Mines; therefore in some cases, owing to this cause, it was not possible to attend. In other cases the Coroner has been kind enough not only to notify but to adjourn the inquest pending the attendance of the Inspector, and this privilege is appreciated.

During the year in the Kootenay-Boundary District sixty-three mines were visited and 181 visits of inspection made, as follows:—

	Mines Inspected.	Visits of Inspection.
West Kootenay and Boundary District	54	150
East Kootenay District	9	31

ACCIDENTS.

As provided for by section 19 of the "Metalliferous Mines Regulation Act," notice was received of fifteen accidents, involving death or injury to an equal number of workmen. Fourteen of these accidents came under subsection (*b*) and one under subsection (*a*), due to explosion of some detonators. This shows a slight increase in the accident-rate over 1925 and in the case of the fatal accidents equals 66 per cent. The rate of fatal accidents per thousand employees

for 1926 is slightly over three per thousand, as compared with 1.7 for 1925. Of the fifteen accidents, three fatal and eight serious occurred underground, two fatal and two serious outside the mine.

According to districts, the accidents occurred as follows:—

District.	Mine.	Fatal.	Serious.
East Kootenay	Sullivan	2	7
East Kootenay	Stemwinder	1	....
Nelson	Molly	....	1
Slocan	Slocan Star	....	1
Slocan	Carnation	1	....
Slocan	Rambler	1	....
Boundary	Wellington	....	1

Cause.	Number.
Haulage	4
Falls of roof or sides	4
Chutes	2
Rock on muck-pile	3
Ladder	1
Explosions	1
Employment.	
Electrician	1
Timberman	1
Motor-helper	2
Miner	5
Labourers or muckers	6

In investigating these accidents, it is impossible to overlook the fact that the greater number of these are avoidable, generally by more care on the part of the workmen.

In the case of the fatal accidents, two occurred in the Slocan district, both due to falls of roof or sides. Better supervision and a more careful examination of the mine-workings, as provided for by section 16 of the regulations, would go a long way to reduce this class of accidents.

In the case of the *Rambler-Cariboo* mine, where within the past few years two workmen were killed under similar circumstances, in both cases the workmen are supposed to have gone into some old workings and falls of either roof or sides killed them.

The fatal accident connected with the chute in the *Sullivan* mine, where the deceased and several others visited the scene of the stoppage in the chute, arranged to place a charge of explosives to relieve the block, placed the charge and lighted the fuse, then when retreating the block relieved and carried the man into the chute, with fatal results. There was even sufficient time to get the body out of the chute before the blast went off, and the only good point about the whole business was that only one man was caught, for at one time there were four men in the chute inspecting this block.

It has now been arranged to provide safety chambers and passages to prevent a repetition of such accidents in this mine, and attention is drawn to stress this point so that others may take steps to avoid such accidents.

The other fatal accident at the *Sullivan* mine was outside the tunnel portal, where an old man over 70 years of age was employed cleaning up tracks, etc. Unfortunately he was slightly deaf and did not hear the ore-train coming out and was run over.

The fatal accident at the *Stemwinder* can only be accounted for as accidental, as the deceased while barring down ore in the loading-bins outside the mine, using a long steel bar, a fairly large piece struck the point of the crowbar in the chute, causing the other end to fly up and strike the man under the chin, breaking his neck.

Rocks rolling down the muck-pile was the cause of three non-fatal accidents, and it is thought that the workmen could be more careful to see that the angle of repose on the muck-pile is maintained and so prevent such accidents.

In the case of the man injured by an explosion of detonators, while the evidence of the witnesses is conflicting, there is distinct evidence of carelessness. This man was crimping a detonator on to a fuse and a box containing a fairly large amount of detonators went off, severely injuring him.

Witnesses claim, although the man was a smoker, he was not smoking when the occurrence took place in the blacksmith-shop; they claim the furnace was not going, nor did the detonator the man was working on go off. The only logical conclusion that can be arrived at, despite this evidence, is that either the workman was smoking a pipe or a cigarette, or the furnace was in use and that a spark dropped in the box of detonators, causing the ignition. As a matter of fact, in this case the workman did not have a blaster's certificate. This is a common occurrence with prospectors, but as was remarked before, not because of any wish to defy the law, but due to ignorance of the new regulations.

FIRST-AID WORK.

At the *Sullivan* classes in first aid were held last winter as usual, and two teams, one representing the mine and the other the concentrator, took part in the annual field-day of the East Kootenay Mine Safety Association. At other mines in the district very litte attention is given to this work, although the need for such is even greater, frequently situated far from medical aid, than are the large mines, which usually have ready access to medical aid.

Thanks are again extended to the workmen, the officials, and the companies for their assistance and co-operation in carrying out our duties during 1926, and look forward with confidence to a continuation of the same, realizing that it is only with their co-operation that the list of accidents, both fatal and non-fatal, can be reduced and kept to its lowest.

REPORTS OF COAL-MINE INSPECTORS.

The coal-mines of the Province are situated in four Inspection Districts—namely, Vancouver Island, Northern, Nicola-Princeton, and East Kootenay Districts.

VANCOUVER ISLAND INSPECTION DISTRICT.

THOS. R. JACKSON, HENRY DEVLIN, AND H. E. MIARD, INSPECTORS; JAS. W. JEMSON, ACTING-INSPECTOR.

The Canadian Collieries (Dunsmuir), Limited, operated Nos. 4, 5, and 6 mines, Comox Colliery, and Nos. 1, 2, 3, 5, 6, 8, and Vancouver slope, Wellington Extension Colliery.

The Western Fuel Corporation of Canada, Limited, operated No. 1 Reserve and Wakesiah mines, Nanaimo Colliery.

The Granby Consolidated Mining, Smelting, and Power Company, Limited, operated No. 1 mine, Granby Colliery, Cassidy.

The Nanoose-Wellington Coal Company, Limited, operated the Lantzville mine at Lantzville.

The East Wellington Coal Company, Limited, operated the No. 1 mine, East Wellington.

King & Foster (Island Collieries) operated Nos. 2 and 6 mines at Wellington.

The West Coast Collieries, Limited, Morden and Suquash Collieries, did not operate during the year.

NORTHERN INSPECTION DISTRICT.

The Telkwa Collieries operated the Goat Creek mine.

NICOLA-PRINCETON INSPECTION DISTRICT.

JOHN G. BIGGS, INSPECTOR (HEADQUARTERS, MERRITT).

The Middlesboro Collieries, Limited, operated Nos. 4, 4 East, 5 East, and 5 South mines, Middlesboro Colliery, Merritt.

The Keystone Coal Company operated a pair of slopes in the No. 5 seam.

The Coalmont Collieries, Limited, operated Nos. 3 and 4 mines, Coalmont Colliery, Blakeburn.

The Princeton-B.C. Colliery Company, Limited, operated the new shaft mine at Princeton.

The Tulameen Valley Coal Mine Company operated its No. 1 mine.

The Sunshine Coal Company did a little work and made a small shipment from its mine near Merritt.

The Chu Chua, Wigan Collieries, and Hat Creek mines did not operate during the year.

EAST KOOTENAY INSPECTION DISTRICT.

ROBT. STRACHAN, SENIOR INSPECTOR, AND JOHN MACDONALD, INSPECTOR (HEADQUARTERS, FERNIE).

The Crow's Nest Pass Coal Company, Limited, operated No. 1 East, No. 2, No. 3, No. 1 South, and No. 9 mines, Coal Creek Colliery, and No. 3, No. 3 East, and No. 8 mines, Michel Colliery.

The Corbin Coals, Limited, operated Nos. 4, 5, and 6 mines, Corbin Colliery.

VANCOUVER ISLAND INSPECTION DISTRICT.

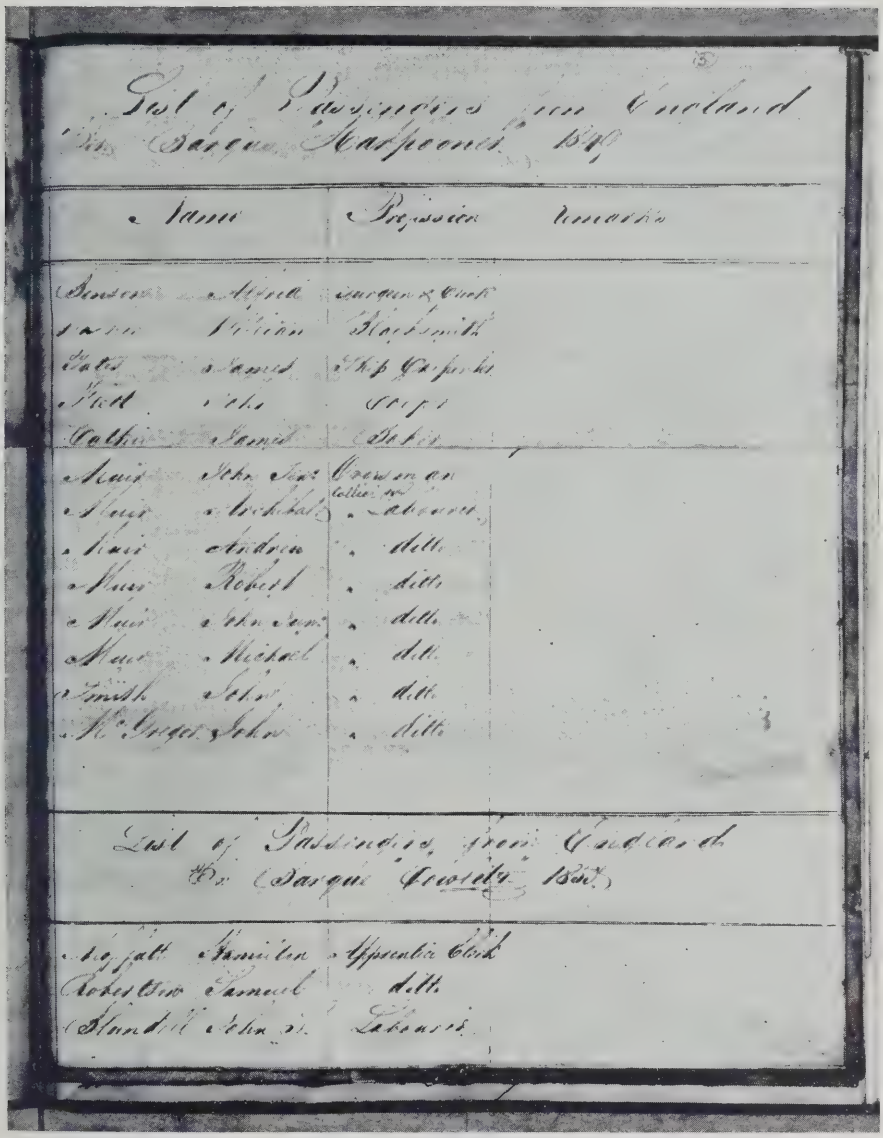
REPORTS BY THOS. R. JACKSON AND HARRY E. MIARD, INSPECTORS.

Western Fuel Corporation of Canada, Ltd.

Head Office—Nanaimo, B.C.

H. J. McClung, President, Phoenix, Arizona; G. W. Bown, Vice-President, Nanaimo, B.C.; Mark Bate, Jr., Secretary-Treasurer, Nanaimo, B.C.; John Hunt, General Manager, Nanaimo, B.C.

The above company operated during 1926 the Nanaimo Colliery, which consists of No. 1 Reserve and Wakesiah mines. all situated in the vicinity of the city of Nanaimo.



List of Passengers from England
Per Barque Harpooner 1849

	Name		Profession	Remarks
1	Benson	Alfred	Surgeon & Clerk	
2	Walker	William	Blacksmith	
3	Yates	James	Ship Carpenter	
4	Flett	John	Cooper	
5	Cathie	James	Baker	
6	Muir	John Sen.	Overseman	
7	Muir	Archibald	Collier or Labourer	
8	Muir	Andrew	do.	
9	Muir	Robert	do.	
10	Muir	John Jun.	do.	
11	Muir	Michael	do.	
12	Smith	John	do.	
13	McGregor	John	do.	

List of Passengers from England
Per Barque Cowlitz 1850

14	Moffatt	Hamilton	Apprentice Clerk	
15	Robertson	Samuel	do.	
16	Blundell	John S.	Labourer	

The above is a reproduction of the passenger-list on the barque "Harpooner" in 1849 and barque "Cowlitz," 1850. Many of these passengers were the first coal-miners brought to Nanaimo under contract by the Hudson's Bay Company.

1. Benson, Alfred, surgeon and clerk.
2. Walker, William, blacksmith.
3. Yates, James, ship carpenter.
4. Flett, John, cooper.
5. Cathie, James, baker.
6. Muir, John, Sr., oversman.
7. Muir, Archibald, collier or labourer.
8. Muir, Andrew, collier or labourer.
9. Muir, Robert, collier or labourer.
10. Muir, John, Jr., collier or labourer.
11. Muir, Michael, collier or labourer.
12. Smith, John, collier or labourer.
13. McGregor, John, collier or labourer.
14. Moffatt, Hamilton, apprentice clerk.
15. Robertson, Samuel, apprentice clerk.
16. Blundell, John S., labourer.

The following returns show the combined output of all the mines of the Nanaimo Colliery:—

AGGREGATE RETURNS FROM THE WESTERN FUEL CORPORATION'S MINES FOR YEAR 1926.

SALES AND OUTPUT FOR YEAR.	COAL.		COKE.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	400,653	.....	.....	.....
Sold for export to United States	43,075	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	443,728	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	39,221	.....	.....	.....
Used under colliery boilers, etc	67,900	.....	.....	.....
Total for colliery use	.....	107,121	.....	.....
		550,849		
Stocks on hand first of year	31,932	.....	.....	.....
Stocks on hand last of year	25,406	.....	.....	.....
Difference taken from stock during year	.....	6,526	.....	.....
Output of colliery for year	.....	544,323	.....	.....

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

Character of Labour.	UNDERGROUND.		ABOVE GROUND.		TOTALS.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	43	.....	40	.....	83	.....
Whites—						
Miners	359	.....	.....	.....	359	.....
Miners' helpers	8	.....	.....	.....	8	.....
Labourers	284	.....	116	.....	400	.....
Mechanics and skilled labour	111	.....	98	.....	209	.....
Boys	43	.....	37	.....	80	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	112	.....	112	.....
Indians	1	.....	.....	.....	1	.....
Totals	849	.....	403	.....	1,252	.....

REPORT BY THOS. R. JACKSON, INSPECTOR.

NANAIMO COLLIERY.

No. 1 MINE.

Arthur Newbury, Manager; Edward Courtney, Overman, Protection Mine. John Sutherland, Overman, No. 1 Mine. Robert Adam, Matthew Broderick, William Halliday, William Neave, James Dudley, Alex. Coombs, George B. Bradshaw, John Weeks, John Devlin, John Marrs, James McMeakin, George Perry, Andrew Bennett, Joseph Dean, Neil McMillan, J. M. Brown, Thomas J. Woods, George Jardine, Josh Norris, George Moore, and Fred Nash, Firebosses.

This mine is situated at the south end of the Esplanade on the shore-line of the bay. It is the oldest working-pit in the Nanaimo district and has a large submarine area extending several miles in a seaward direction. The mine has four openings. No. 1 shaft is used for hoisting coal and the screening plant is situated at this shaft; it also serves as a downcast shaft for the ventilation of the South side workings. The men working in the South side portion of the mine are also raised and lowered at this shaft. No. 2 shaft, which is situated about 300 feet distant from No. 1, serves as an upcast shaft for the ventilation of the South side workings. Protection shaft, which is situated on Protection island across the bay, about 1 mile distant from No. 1 shaft, serves as a downcast shaft for the ventilation of the North side workings. The men who work in the North side portion of the mine are lowered and raised in this shaft; there is a ferry in operation for taking the men to and from Nanaimo. Newcastle shaft, situated on Newcastle

island, about 3 miles distant from No. 1 shaft, serves as an upcast shaft for the ventilation of the North side workings. It is also provided with a ladder-way serving as a third means of ingress and egress from No. 1 mine.

The power plant consists of two 530-horse-power Babcock & Wilcox water-tube boilers, coupled with two 208-horse-power return-tubular boilers which operate at a lower pressure than the B. & W., the steam from the B. & W. passing through a No. 8 "Locke Pressure" reducing-regulator which works very satisfactorily. The B. & W. boilers were installed during 1925, being completed in October, and are equipped with chain-grate stokers, induced and forced draught fans. Copes feed-water regulators and Cochrane steam-flow meters. A new feed-pump of the Rees turbo type has been installed and is giving every satisfaction.

The installation of the two new boilers dispensed with the service of two water-tube boilers and six return-tubular boilers, four of the latter being left for purposes of emergency. The present installation marks a considerable saving of both fuel and man-power.

The boilers supply steam to the power-house, which consists of two cross-compound Ingersoll-Rand compressors, each supplying 2,500 cubic feet of air a minute, and two Robb-Armstrong Corliss-valve engines which are direct-connected to d.c. generators, also to fan, hoisting, and washery engines and mine-pump. A Post-type brake engine controls the hoisting-engine.

Electrical equipment consists of two generators driven by steam-engines. One generator is of the Westinghouse type, 250 kw., running at 150 r.p.m. and direct-coupled to a Robb-Armstrong steam-engine. These units supply power to all the electrically driven machinery above ground and underground. There are underground one 10-ton Westinghouse motor; three 6-ton Jeffrey motors; and one 10-ton Edison motor, all of which are operated on the open overhead-trolley system; four electric hoists ranging from 30 to 140 horse-power; and a 3-stage centrifugal pump driven by a 125-horse-power motor running at 1,740 r.p.m.

The power is carried into the mine by four armoured cables which enter the mine by way of the shaft; two of these are leads and two returns.

In connection with the washery plant, two centrifugal pumps of the Fairbanks-Morse type and capable of delivering 1,000 gallons of water a minute each are driven by two 40-horse-power motors. There is also a 90-horse-power motor used for the sludge-pump and a 30-horse-power motor used for driving the coal-washers. Seven motors are in use at the coal wharves for raising and lowering the coal-chutes to facilitate loading coal into scows or ships.

Firebosses and shotlighters use the Wolf safety flame-lamp; workmen use the Edison electric safety head-lamp.

Operations are being conducted in the Douglas and Newcastle seams. On the South side of the mine the Douglas seam is wrought exclusively; on the North side of the mine coal is taken from both seams. Permitted explosives are used for blasting; shots are fired by cable and electric battery; compressed air and electricity are used as motive power for haulage and drainage purposes. Hoisting-engines at the shafts are steam-driven.

Haulage on the Main levels on the North side of the mine is done by electric locomotives of the overhead-trolley type. Heavy steel rails are laid and a copper trolley-wire carried for approximately 3 miles on No. 1 level, extending from the shaft to near the foot of Lamb's incline. Haulage on the South side of the mine is a combination of electric motor and direct rope-haulage on the main roads and drivers and horses are employed for the purpose of getting the cars to and from the working-faces to the main haulage.

The development-work on the North side of this mine has been chiefly confined to driving No. 6 slope, which is about 1,500 feet past No. 5. The slope is about 175 feet long on a grade of 1 in 3. The seam is 24 inches thick and of good quality. There are two face-lines, 300 feet each, and the coal is loaded out by means of conveyors. The development-work on the South side was confined to driving five north slopes; a fairly good area of coal has been found in this section. The slopes have been graded, heavy steel rails laid to the face, and an electric hoist installed to handle the coal.

The following conditions were found to prevail at the time of different inspections during the month of December: There were seven men and one horse in Protection pillars; there were four men and one horse in Hope section.

Lamb's Incline Split.—There were sixty-eight men and nine horses in this split and the quantity of air passing a minute for their use was 13,500 cubic feet.

There was 53,760 cubic feet of air a minute passing up Protection slope, which divides into four splits.

Diagonal Slope.—All working-parts were examined and conditions found to be generally fairly good. No methane was detected and the sections were fairly free from coal-dust. There was 47,000 cubic feet of air a minute passing down Main slope, dividing into three splits.

Diagonal Slope Split.—There was 18,000 cubic feet of air a minute passing for the use of forty men and ten horses. The pillars being extracted in this slope are more or less connected with coal area which has been affected by spontaneous combustion in the past and must be recovered now or definitely abandoned. This slope is finishing fairly rapidly.

No. 2½ Wall, No. 4 Wall, and No. 10 Rock Tunnel.—All working-parts were examined. The general conditions were good; no gas found and sections practically free from coal-dust owing to dampness, water, and mud. There were six men and one horse in No. 2½ wall; twelve men and four horses in No. 4 wall; and five men and one horse in No. 10 wall.

No. 3 Wall Split.—There was 7,000 cubic feet of air a minute passing for the use of seventeen men and five horses.

No. 5 North Slope.—All working-parts were examined and the general conditions were found to be good. About 3 cubic feet of explosive gas was found at face of No. 1 Left roadway. This section was comparatively free from coal-dust, except along the principal part of No. 1 Left level, where more incombustible dust should be added to fulfil the requirements of the "Coal-mines Regulation Act."

No. 5 North Slope Split.—There was 8,000 cubic feet of air a minute passing for the use of twenty-two men and two horses. This section is in the course of development and for the past month or so has exhibited a fine area of coal, out of which a production of 22 tons a day is obtained. Considerable solid ground is ahead of this slope operation.

No. 3 Level, South Side.—All working-parts were inspected. The general conditions were good. No gas was found and the sections fairly free from coal-dust, due to the natural dampness prevailing.

Protection Pillar Split.—There was 20,000 cubic feet of air a minute passing for the use of forty men and six horses. The coal produced from this level consists mostly of what is obtained from pillar-extraction. A new slope is being pushed down from the Douglas to the Newcastle seam. It is expected to develop this seam by means of electric coal-cutters and perhaps use conveyors as the means to get the coal from the face-line to the cars in the roadway.

Protection Pillar Section, Hope, No. 5 and No. 6 Slopes, and No. 7 Long-wall.—All parts of these workings were inspected. The general conditions were good. No gas was found and sections were practically free from coal-dust.

The workmen at this mine availed themselves of the opportunity provided by the provisions of section 101, Rule 37, "Coal-mines Regulation Act," and appointed their own representatives for the purpose of examining the mine. Inspections have been made regularly during the year and reports of inspections, which were generally satisfactory, have been sent to this office.

The following are the official returns for No. 1 mine for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	235,400			
Sold for export to United States	25,317			
Sold for export to other countries				
Total sales		260,717		
Used in making coke				
Lost in washing	21,877			
Used under colliery boilers, etc.	46,057			
Total for colliery use		67,934		
		328,651		
Stocks on hand first of year	20,142			
Stocks on hand last of year	15,024			
Difference taken from stock during year		5,118		
Output of colliery for year		323,533		

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		
Supervision and clerical assistance	26	.....	26	.....	52	.....
Whites—						
Miners	178	7.36	.....	.....	178	.....
Miners' helpers	.....	.....	.....	.....	.....	.....
Labourers	186	4.01–4.55	72	3.12–4.68	258	.....
Mechanics and skilled labour	82	4.55–5.22	54	4.92–5.96	136	.....
Boys	21	1.78–3.54	18	1.14–3.00	39	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	64	2.20–3.20	64	.....
Indians	.....	.....	1	4.38	1	.....
Totals	493	.....	235	.....	728	.....

REPORT BY THOS. R. JACKSON, INSPECTOR.

RESERVE MINE.

Robert Laird, Manager; Clifford Dickinson, Overman; Richard Rallison, Ernest Delly, Jacob Stobbart, Fred Bell, George Frater, Albert Manifold, William Neilson, James McGrath, Harry Allsopp, and Harry Meikle, Firebosses.

This mine is situated in the Cranberry district, about 5 miles south of Nanaimo. The first shaft sunk reached the seam at a depth of 1,162 feet. On account of folding in the measures and heavy pitches it was decided to drive a crosscut tunnel 7 by 12 in sections across the measures at a point 950 feet from the surface, with the result the seam was struck at a distance of 180 feet from the shaft. The second shaft was sunk to a depth of 950 feet and a tunnel driven across the measures for a similar distance and the seam struck. A level was then driven in the coal a distance of 300 feet, connecting the two tunnels. After considerable development-work had been done from this point a new tunnel was driven across the measures from No. 1 shaft at a point 200 feet higher, penetrating the seam at a point about 200 feet distant from the shaft. This tunnel is now the main haulage of the mine.

Operations are conducted in the Douglas seam, which is very much troubled with "folds" or overlaps, which tend to make operations difficult. At times the seam pinches out and may be found underlapping or overlapping. The coal, which carries from 3 to 20 feet in thickness, is fairly hard, with a fairly good roof.

Complaints of men being affected by sulphur were not quite so numerous this year, a circumstance that is highly gratifying.

The ventilation of this mine is produced by a pair of 90-inch Sirocco fans, connected to a 20- by 30-inch engine, rope-driven. On the engine is a drive-wheel 5 feet in diameter. These fans, running at an engine-speed of 16 r.p.m., are capable of producing 100,000 cubic feet of air a minute, against a 3-inch water-gauge.

A description of the surface plant at this mine has been given in former reports. The underground mechanical haulage is carried on by means of compressed-air winches.

Edison electric head-lights are used exclusively by all the workmen; the firebosses and shot-lighters use the Wolf-type flame safety-lamp.

The conditions prevailing at the time of inspections made during the month of December are as follows:—

All working-parts of the mine were inspected and general conditions were found to be good. No gas was found and the mine was fairly free from coal-dust. Sulphur was detected in air of No. 2 place, Left section.

Rock Tunnel Split.—There was 15,400 cubic feet of air a minute passing for the use of twenty men and three horses.

No. 10 Dip Split.—There was 15,400 cubic feet of air a minute passing for the use of sixty-five men and eight horses.

Main return had 29,400 cubic feet of air a minute passing.

The workmen at this mine availed themselves of the opportunity provided by the provisions of section 101, Rule 37, "Coal-mines Regulation Act," and appointed their own representatives for the purpose of examining the mine. Inspections have been made regularly during the year and reports of inspections, which were generally satisfactory, have been sent to this office.

Two fatal accidents occurred at this mine during 1926.

The following are the official returns for Reserve mine for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	140,989	.....	.....	.....
Sold for export to United States	15,133	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	156,122	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	15,417	.....	.....	.....
Used under colliery boilers, etc.	10,321	.....	.....	.....
Total for colliery use	.....	25,738	.....	.....
		181,860		
Stocks on hand first of year	7,912	.....	.....	.....
Stocks on hand last of year	6,643	.....	.....	.....
Difference taken from stock during year	.....	1,269	.....	.....
Output of colliery for year	.....	180,591	.....	.....

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		
Supervision and clerical assistance	11	.....	9	.....	20	.....
Whites—						
Miners	127	6.67	.....	.....	127	.....
Miners' helpers	6	4.01	.....	.....	6	.....
Labourers	68	4.01–4.55	29	3.50–4.68	97	.....
Mechanics and skilled labour	19	4.55–5.22	30	4.92–5.56	49	.....
Boys	13	1.78–3.54	12	1.14–3.00	25	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	43	2.20–3.08	43	.....
Indians	1	4.30	.....	.....	1	.....
Totals	245	.....	123	.....	368	.....

Report by Harry E. Miard, Acting-Inspector.

WAKESIAH COLLIERY.

Arthur R. Wilson, Manager; Nat. Bevis, Overman; Thos. Chapman, Harry Carroll, Andrew Dean, James Richards, and John Webber, Firebosses.

This mine, situated on the Western Fuel Corporation of Canada's farm, about 2 miles from Nanaimo, is operated in the Wellington seam, which here varies in thickness between 2 and 20 feet. Minor dislocations are common and the dip, although irregular, is usually moderate, except on the western side of the mine, where it reaches, and even occasionally surpasses, 45°. Both the pillar-and-stall and the long-wall methods of working were formerly in vogue here, but early in 1926 the long-wall sections were abandoned and the coal-cutting machines and the conveyors were withdrawn. Following this, the mine stood practically idle for a period of about six months, only a few maintenance-men remaining at work.

Operations were resumed in September, 1926, in the Lewis Heading and the Slope sections. Rock tunnels were also started in Gavin's dip in order to develop the seam on the east side of the mine, but so far it has been found very thin. On the west side of the Lewis Heading district the thick and highly inclined part of the seam already mentioned was reached, after a small fault had been cut through, and was opened on the pillar-and-stall system, the coal being brought to the level by a chute serving all places. This has proved to be a very profitable operation and the No. 2 Right level in the Slope section is now being reopened with the intention of reaching the same ground at another point.

The mine is entered by two shafts, 320 feet in depth. The coal is hoisted by a 14 by 16 first-motion steam-hoist, a single cage with counterbalance being used. Steam, electricity, and compressed air are used as motive power underground. The hoists handling the output of the Slope and Gavin's dip are operated by steam, as is the large Cameron pump at the shaft-bottom. The winches used on the main and tail haulage in the Lewis Heading section and several small pumps, taking care of local drainage, are driven by compressed air. The Lewis Heading passes over a minor anticlinal fold and the output of the whole section is brought up one of its branches, and lowered down the other, by an electric hoist situated at its apex. The shaft-bottom and the stables are electrically lighted.

The roof is a sandy shale, often frail, and demanding careful timbering. The roadways are kept in fairly good condition. A considerable part of the workings is rather damp. Samples of dust are collected at regular intervals on the roadways, and when they have been tested inert dust is applied, if necessary, to bring the proportion of incombustible matter up to the prescribed percentage.

Storage-battery electric cap-lamps are used exclusively by all workmen. Officials are provided with Wolf safety-lamps for gas-testing purposes.

Explosive gas was met only once in the course of inspection during 1926, a small quantity having accumulated in the cavity left by a fall of roof in an abandoned stall. The ventilation of the Lewis Heading section benefited considerably from a rearrangement just completed at the end of 1926.

The mine is ventilated by a 90-inch Sirocco fan installed in 1925. At the time of the last inspection 11,200 cubic feet of air a minute was supplied to the Lewis Heading section for the use of forty men and five horses; 6,300 cubic feet passed into the Slope split for twelve men and three horses; and Gavin's dip received 5,500 cubic feet a minute for the use of three men. The total quantity measured a short distance away from the downcast shaft was 25,000 cubic feet.

Only one serious accident was reported from this mine during 1926. A fireboss sustained a broken thigh when struck by a loaded car.

The following are the official returns from the Wakesiah Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	24,263	.....	.....	.....
Sold for export to United States	2,625	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	26,888	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	1,926	.....	.....	.....
Used under colliery boilers, etc.	11,521	.....	.....	.....
Total for colliery use	.....	13,447	.....	.....
		40,335		
Stocks on hand first of year	3,877	.....	.....	.....
Stocks on hand last of year	3,739	.....	.....	.....
Difference taken from stock during year	.....	138	.....	.....
Output of colliery for year	.....	40,197	.....	.....

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

(Average for six months operated.)

Character of Labour.	UNDERGROUND.		ABOVE GROUND.		TOTALS.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		
Supervision and clerical assistance	6	.....	5	.....	11	.....
Whites—						
Miners	54	6.91	.....	.....	54	.....
Miners' helpers	2	4.01	.....	.....	2	.....
Labourers	30	4.01–4.55	15	3.50–4.68	45	.....
Mechanics and skilled labour	10	4.55–5.22	14	4.92–5.56	24	.....
Boys	9	1.78–3.54	7	1.14–3.00	16	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	15	2.20–3.08	15	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	111	.....	56	.....	167	.....

Canadian Collieries (Dunsmuir), Ltd.

Head Office—Montreal, Que.

F. Perry, President, Montreal, Que.; Lieut.-Col. Chas. W. Villiers, General Manager, Victoria, B.C.; H. S. Adlington, Secretary, Montreal, Que.; P. S. Fagan, Assistant Secretary, Victoria, B.C.; Thomas Graham, General Superintendent, Cumberland, B.C.

The above company operated the following mines during 1926: The Comox Colliery, Nos. 4, 5, and 6 mines, situated in the vicinity of Cumberland; the Wellington Extension Colliery, Nos. 1, 2, 3, 5, 6, 8, and Vancouver slope, situated at Extension; and No. 5 mine, situated at South Wellington.

The following returns show the combined output of the company's collieries during 1926:—

AGGREGATE RETURNS FROM THE CANADIAN COLLIERIES (D.), LTD., MINES FOR YEAR 1926.

SALES AND OUTPUT FOR YEAR.	COAL.		COKE.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	357,527	.....	.....	.....
Sold for export to United States	43,396	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	400,923	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	76,213	.....	.....	.....
Used under colliery boilers, etc	20,675	.....	.....	.....
Total for colliery use	.....	96,888	.....	.....
		497,811		
Stocks on hand first of year	12,949	.....	.....	.....
Stocks on hand last of year	9,171	.....	.....	.....
Difference taken from stock during year	.....	3,778	.....	.....
Output of colliery for year	.....	494,033	.....	.....

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	54		33		87	
Whites—						
Miners	438		.....		438	
Miners' helpers	11		.....		11	
Labourers	159		69		228	
Mechanics and skilled labour	103		137		240	
Boys	6		24		30	
Japanese	115		.....		115	
Chinese	99		.....		99	
Indians	78		70		148	
Totals	1,063		333		1,396	

COMOX COLLIERIES.

These mines are situated in the Comox district, about 13 miles from Union Bay (by road). A railway about 20 miles in length connects the separate mines to a shipping-point at Union Bay, over which the whole output of coal is conveyed.

The mines in operation are Nos. 4, 5, and 6. The latter is a shaft acting as a means for drainage and intake air for No. 5 mine. No. 4 mine is located at the east end of Comox lake and is about 3 miles distant from the city of Cumberland. No. 5 mine is about a mile away from the city. No. 6 is close to the city.

The mine ventilation of Nos. 1 and 2 slopes, of which No. 4 mine is comprised, is produced by a Sullivan reversible fan, double-inlet, having a capacity of 180,000 cubic feet of air a minute, against a 6-inch water-gauge. This fan, which is located at the return end of No. 2 parallel slope, is electrically driven by a 350-horse-power induction-motor, 2,200 volts, speed 250 r.p.m., directly connected to the fan-shaft. A 108-inch double-inlet reversible Sirocco fan is situated at the return end of No. 1 parallel slope and is now in operation.

A large area of the seam to the dip has been worked out, abandoned, and allowed to fill up with water. This great reduction of old workings, through which the air travelled at one time, has enabled the management to augment the ventilation.

Advantage was taken by the workmen, under provision of Rule 37 of section 101 of the "Coal-mines Regulation Act," to appoint their own representatives for the purpose of examining the mine. Inspections have been made regularly and the reports furnished to this office have shown conditions found were generally satisfactory.

The hydro-electric plant of this company, which has been described in previous reports, has been in constant operation during 1926. Sufficient electricity is generated at this plant to supply motive power to all the collieries, the wharf at Union Bay, and for the lighting of Union Bay and Cumberland.

No. 4 MINE.

Thos. Williams, Manager; John S. Williams, Overman, No. 1 Slope; Charles Parnham, Overman, No. 2 Slope; Charles O'Brien, Sam Harwood, William Devoy, Harry Jackson, A. W. Watson, Tom Shields, William Herd, Thomas Lewis, J. H. Caughan, Robert Walker, Watkin Williams, Alf Jones, James Quinn, E. H. Devlin, and Tom Wilson, Firebosses.

This mine consists of two slopes with but one main entrance. There is also a manway part of the way. No. 1 slope runs due north; the lower workings beyond No. 15 West level are practically abandoned. No. 2 slope runs N. 45° E. and all work is practically finished beyond No. 18 West level. These slopes diverge at a point about 75 feet from the main portal. The electric haulage-engine is so connected that trips can be run simultaneously on both slopes to a point where they converge to the main entrance.

The men are conveyed from the bottom and other sections of the slope in a man-trip at the end of each working-shaft. A safety-car is connected to the rear of the man-trip, which ensures the safety of the workmen while riding up the slope. As a precaution against trips breaking away on these slopes the car is now used behind all trips ascending the slopes. Electric head-lights of the Edison storage-battery type are used by the workmen and the firebosses use flame safety-lamps of the Wolf type for testing purposes.

In No. 1 slope electricity is used as the motive power to operate all pumps, winches, and motors. A storage-battery locomotive is employed for haulage purposes in No. 11 West level, which has been reopened through a pillar area for about a mile.

The extraction of pillars is general throughout the mine. The thickness of the coal varies from 3 to 7 feet.

In No. 4 mine the work during 1926 has produced a further increase of pillar-extracted area to the dip off No. 14 West level, No. 1 slope, and No. 15 East and West levels, No. 2 slope, which has been allowed to fill up with water.

The main electric pump is stationed just below No. 15 East level on the left side of slope, and will meet all requirements in connection with keeping the water at a certain level in order to better further extraction of the pillars.

No. 1 West level has penetrated the old working-pillar area for a distance of approximately a mile, and No. 6 East level, No. 2 slope, has advanced into the old pillar area close to 4,000 feet. Both levels are still advancing. No new ground is being developed either in No. 1 or 2 slope of this mine.

The following conditions were found to prevail during the various inspections in December: The workings in Nos. 5 and 6 East levels and No. 7 West level were examined and found to be in good condition generally. There was 54,000 cubic feet of air a minute passing down Main slope at a point immediately above No. 7 West level.

The roadways generally were in good condition, except a few parts where roof-pressure had occurred, causing some low broken stringers; but repairmen were at work in these defective places. No explosive gas was found and the sections were practically free from coal-dust on account of natural dampness and water.

There were thirty-four men and six mules engaged in Nos. 5 and 6 East levels, which are ventilated by the main East split. There were twelve men and three mules engaged in No. 7 West level, which is ventilated by the main West split.

The workings in No. 15 East level and Nos. 11 and 16 West levels, No. 2 slope, were examined, and the following conditions found to prevail therein: The ventilation was good, except the inside place to raise of No. 15 East slope, where it was sluggish, due to derangement of the curtains. Some black-damp was found in this place, which was fenced off. No explosive gas was found, but a trace to ⅛-inch gas-cap was obtained at face of main Right roadway, No. 15 East level.

Roadways were generally in good condition and the timbering was in good order. The section was practically free from coal-dust on account of dampness and water.

In No. 15 East level split there was 15,200 cubic feet of air a minute passing for the use of fifty-nine men and nine mules. In West side split there was 13,400 cubic feet of air a minute passing for the use of forty-five men and five mules.

The total quantity of air entering the main intake airways of No. 4 Comox mine was 135,800 cubic feet a minute, totalled as follows: Manway, 35,000; main, 100,800. The methane content in air at fan averages from 0.1 to 0.3 per cent. Only permitted explosives are used and all blasting done by means of cable and battery under the supervision of certificated officials.

The workings in Nos. 9, 11, and 14 West levels, No. 1 slope, were examined, and the following conditions found to prevail therein: Measured 50,000 cubic feet of air a minute passing down Main slope at a point immediately above No. 11 West landing, which divided into two main splits, namely: No. 11 West level split, which passed 32,000 cubic feet of air a minute, and the Slope split, which passed the remaining 18,000 cubic feet of air a minute.

The quantity of air passing into No. 11 West level is divided into a Right and Left split. In the Left split there was 15,200 cubic feet of air a minute passing for the use of fifty-six men and six mules; in the Right split there was 13,000 cubic feet of air a minute passing for the use of forty-eight men and six mules.

The ventilation was generally good, the roadways were in fairly good condition, and timbering in good order. No explosive gas was found and the sections were practically free from coal-dust owing to dampness and water.

One fatal accident occurred in this mine in 1926, when a Chinese driver was killed by being crushed by a loaded car.

The following are analyses of dust taken during the month of December:—Dust sample from No. 2 slope from No. 7 West level to a point 300 feet above it (screen analysis by weight): Plus 28 mesh—70.54 per cent. by weight; ash, 49.80 per cent.; moisture, 11.04 per cent. Minus 28 mesh—29.40 per cent. by weight; ash, 42.05 per cent.; moisture, 11.04 per cent. Dust sample from No. 1 slope from No. 11 West level to a point 200 feet above on the main slope (screen analysis by weight): Plus 28 mesh—81.45 per cent. by weight; ash, 48.20 per cent.; moisture, 17.54 per cent. Minus 28 mesh—18.55 per cent. by weight; ash, 42.60 per cent.; moisture, 17.54 per cent.

Regarding the placing of sprays in these slopes as was reported in 1925, water-pipes ¾ inch in diameter were laid down each slope for a distance of 2,000 feet. Taps were taken off at intervals of 75 feet and spray-nozzles placed thereon and adjusted that through them a fine spray of water is ejected and is carried by the ventilating air-current down the slope, which dampens the roof, sides, and floor of the roadway in a very efficient manner.

Samples of the mine air were taken at intervals during the year and forwarded to the Dominion Department of Mines, Ottawa, for analysis.

No. 5 Mine.

George O'Brien, Manager; Robert Brown, Overman; Sam Jones and Robert McNeil, Firebosses.

The workings of this mine are reached by a shaft 280 feet deep and known as No. 1 seam. A short distance from the shaft-bottom slopes have been driven down through the measures to another vein of coal called No. 2 seam, 115 feet vertically below No. 1 seam. No. 2 seam, which is about 40 inches high, is still in the course of development. The undercutting of the coal in the development-work is done by a Sullivan chain-cutter mining-machine of a type approved by the Bureau of Mines and operated by means of electricity of 440 volts.

The Edison electric head safety-lamp is used by all workmen and the firebosses use the flame safety-lamp of the Wolf type for testing purposes. Only permitted explosives are used. No blasting is done without the use of cable and battery and shots are fired under the supervision of certificated officials.

The engine used for hoisting purposes in this shaft, which is 280 feet deep, is a Wellman-Seaver-Morgan engine, coupled to a 300-horse-power motor. Line unit is 2,200 volts, 3-phase system, 25 cycles. The hoist is equipped with single drum having two ropes attached, each of which is 1⅛ inches in diameter. An air-brake control is supplied with an overwinding prevention device.

The fan producing ventilation is a 100- by 100-inch double-inlet reversible fan, driven by a motor of 250 horse-power, speed of 250 r.p.m. Line unit, 2,200 volts, 3-phase system, 25 cycles. The quantity of air produced is 200,000 cubic feet a minute, with a 6-inch water-gauge. This fan is automatically controlled with temperature relays on all bearings. This device does away with the necessity of an attendant, as any excessive temperature would be at once relayed to an electric contact, which would act in cutting off the electric current supplied to operate the fan.

Beginning the last few days in November of 1926 this mine commenced producing coal from its long-walls, of which there are two, each about 300 feet long. These walls are located at the foot of a slope 3,000 feet in length.

The method employed for the removal of the coal from the working-face line is by means of belt-conveyors, two of which are in use at present. For the operations of these walls there are three roadways, comprising an intake and two returns.

The main roadway, which serves the purpose of intake and haulage, is situated in the middle of these sections of long-wall. The ventilating air-current entering the haulage-way splits at the face, one air-current travelling to the right and the other air-current going to the left, and thence into return airways on extreme left and right of walls.

Track is kept laid in the return airways to facilitate the movement of face-props, lagging, cog-wood, or machinery, or the removal in cars of excess rock from the walls or the brushing. At the bottom of the Main slope (which is about 1,000 yards in length and lies between No. 1 and No. 2 seams) there is a main intake roadway where electric cables, transformers, and drainage-pipes are located. A line of props in the middle of this roadway with boards attached separate this equipment from the manway, down and up which the men and animals travel to or from their work.

A gate-end loader is employed and is set in the main haulage roadway at the face. The coal loaded by loaders on the moving belt conveys the coal until it finally falls into the gate-end loader, where creepers grip the coal and convey it up a slightly inclined plane; thence along a short horizontal plane, where the creeper-bars pass underneath the loader and the coal falls into the mine-car. The creeper-bar device is wrought on the endless-rope principle.

There are about eighty men engaged in this operation, which is worked three shifts of eight hours. The coal has to be shot down and the shot-holes are drilled by means of a patent electric rotary drilling-machine.

When inspected in December the mine was found generally in good condition. No gas was found and the ventilation, roadways, and timbering were in good order. The mine was practically free from coal-dust. There were thirty-five men and two mules engaged in this operation during the day shift. The quantity of air passing into the East side of the mine was 106,350 cubic feet a minute. Sample mine-air test showed an average of 0.2 per cent. methane.

No dangerous occurrence was reported from this mine during 1926. It is a pleasure to report that no fatal accident occurred during 1926 at this mine.

No. 6 Mine.

This mine is supervised by the officials of No. 5 mine. Practically all the water entering Nos. 5 and 6 mines is hoisted from No. 6 shaft by specially constructed tanks capable of delivering 1,200 gallons a minute. During the last inspection in December there was 52,000 cubic feet of air a minute passing through to No. 5 Comox mine. Roads and timbering were fair, stoppings good, and no gas was found; no coal-dust exists on account of complete dampness.

The following are the official returns for the year ended December 31st, 1926, and the aggregate output of all the mines of the Comox Colliery:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	226,698	.....	.....	.....
Sold for export to United States	5,012	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	231,710	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	41,244	.....	.....	.....
Used under colliery boilers, etc	4,096	.....	.....	.....
Total for colliery use	.....	45,340	.....	.....
		277,050		
Stocks on hand first of year	8,822	.....	.....	.....
Stocks on hand last of year	2,560	.....	.....	.....
Difference taken from stock during year	.....	6,262	.....	.....
Output of colliery for year	.....	270,788	.....	.....

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	27	.....	17	.....	44	.....
Whites—						
Miners	106	.....	.....	.....	106	.....
Miners' helpers	3	.....	.....	.....	3	.....
Labourers	65	.....	41	.....	106	.....
Mechanics and skilled labour	76	.....	72	.....	148	.....
Boys	6	.....	2	.....	8	.....
Japanese—						
Miners	35	.....	.....	.....	35	.....
Helpers	27	.....	.....	.....	27	.....
Chinese—						
Miners	80	.....	.....	.....	80	.....
Helpers	72	.....	.....	.....	72	.....
Indians	72	.....	23	.....	95	.....
Totals	569	.....	155	.....	726	.....

REPORT BY H. E. MIARD, ACTING-INSPECTOR.

WELLINGTON EXTENSION MINES.

Thos. A. Spruston, District Superintendent.

This division of the Canadian Collieries mining properties comprises Nos. 1, 2, 3, 6, and 8 mines, which, with the new Vancouver slope, are considered as constituting the Extension Colliery, and No. 5 mine at South Wellington, made the subject of a separate section of this report. The entire output of the Extension Colliery is brought to Ladysmith over the Wellington Collieries Railway, which also affords means of transportation to and from their work for the employees of the company residing at Ladysmith.

LADYSMITH.

The general shipping-point for the output of these mines is Ladysmith, where the coal is either loaded on vessels or sent to Mainland points in railway-cars by means of transfer-barges. The coal-washery is equipped with three washers, each having a computed capacity of 200 tons in twelve hours, 6-compartment jigs, and four 14- by 7-foot Mascoe tables taking care of the smaller-sized coal. A very high grade of steam and domestic fuel is produced and finds a ready market in the Coast cities and at many Mainland points.

Power for the washery is supplied by a Pelton wheel. Provisions are made to replace the ordinary fresh-water supply by salt water in case of abnormally cold weather. A 40-kw., 240-volt Allis-Chalmers-Bullock generator is furnishing the power necessary for lighting purposes to the washery and wharves.

EXTENSION COLLIERY.

Jas. Strang, Manager.

The workings of this colliery are situated partly in the Cranberry and partly in the Douglas districts. Here the Wellington seam underlies an area some 2 miles in width at its south-east end, in the vicinity of the Nanaimo river, and extending about 4 miles in a north-westerly direction. The presence of coal in this section was accidentally discovered in the year 1895 and rapid development followed. Unfortunately, the idea of conservation does not seem to have always been uppermost in the minds of pioneer mining men in this field, and a large part of the operations carried on during the last few years has consisted in the recovery of coal left behind in the early days, for reasons that, in the light of present conditions, appear often trifling.

All the Extension mines are in the western limb of an important anticline, the axis of which is closely followed by the Extension valley. The field is traversed by several minor folds, all running in a general north-westerly to south-easterly direction, as do the two major faults. Of the latter, that separating Nos. 1 and 6 mines from Nos. 2 and 3 is by far the most important, both as to continuity and displacement, its throw sometimes approaching 500 feet. At some points it has a comparatively low dip to the south-west and there assumes all the characteristics of an overthrust. As a result of the intense folding the edges of the basin are turned up rather sharply and the highest dips are generally met in the vicinity of the outcrops.

Many dislocations of varying magnitude are encountered in the course of mining operations, as are also rolls, wants, and barren ground. As a rule, these appear with increasing frequency as the south-eastern end of the field is approached. The nature of the roof varies considerably. It is generally a sandy shale, sometimes containing a considerable proportion of carbonaceous matter, seldom exceeding 25 feet in thickness and overlaid by conglomerate. At some points this bed of shale is lacking entirely and at others—namely, in part of No. 2 mine—it assumes a decidedly argillaceous character. The main floor is almost invariably a firm but thin-bedded sandstone.

The entire output of Nos. 1, 2, and 3 mines is brought to the tipple through a rock tunnel, driven 14 by 7 in the clear and on a 1-per cent. grade, which meets No. 1 mine at a distance of three-quarters of a mile from the portal. It continues from there to No. 2 mine, a total distance of a little over a mile. Haulage along this road is by electric locomotives, which also run about half a mile in No. 3 and 1⅓ miles in No. 2 mine. The underground employees are taken to and from their work in "man-trips" hauled by a 13-ton Baldwin-Westinghouse electric locomotive.

No. 6 mine is situated about 1¼ miles to the north-west of the main tunnel and is connected to the tipple by a narrow-gauge railway about a mile in length and an incline 3,000 feet long.

Power-house.—The boiler plant consists of four Goldie & McCulloch return-tubular boilers of 163-horse-power capacity each. The electric power is supplied by three 250-volt d.c. generators. No. 1 is a Crocker-Wheeler of 112.5-kw. capacity, direct-coupled to a 15 by 14 Ideal engine; No. 2 is a 150-kw. Westinghouse, connected directly to a 14 by 14 by 32 Fleming-Harrisburg compound engine; and No. 3 is a 150-kw. General Electric, direct-connected to a 16 by 16 Robb-Armstrong engine. A Blake fire-supply pump 12 by 8 by 10 is maintained in good order in the boiler-house.

During 1926 the Canadian Collieries purchased the plant of the Nanoose-Wellington Coal Company, and a considerable part of the electrical supplies thus acquired was used to improve and extend the Extension power-distributing system.

Wash-house.—This is a steam-heated building, providing accommodation for more than 400 men and equipped with thirty-six spray-baths, a number of hot- and cold-water taps, and a dry-room. Separate lockers and wash-rooms are provided for the firebosses and other officials.

First Aid and Mine-rescue.

Well-attended first-aid classes are conducted every year and the colliery possesses a very competent staff of qualified first-aid men. In addition to the well-equipped room at Extension, an excellently appointed ambulance railway-car is constantly kept in readiness within a short distance of the principal mine entrance.

Local arrangements for the mine-rescue and first-aid contest held at Ladysmith on Labour Day, under the auspices of the Vancouver Island branch of the B.C. Mine Safety Association, were made under the supervision of T. A. Spruston and reflected the most thoughtful and painstaking preparation. The second prize in the mine-rescue contest was awarded to the Extension team, under Captain Geo. Carson, A fact worthy of note is that on the same day Captain Carson obtained the first prize in the five-men first-aid event.

Accidents.

During 1926 six accidents were reported from Extension. Four of these were due to falls of rock, one occurred while timber was being unloaded, and one, which later had unfortunately

to be classed as fatal, was due to a man striking a low stringer while riding on a loaded trip in contravention to the special rules in force at the colliery.

No. 1 Mine.

James Strang, Manager; Thos. Wilson, Overman; William Bauld, David Gordon, John Greenhorn, Harry Mitchell, and Alex. Orr, Firebosses.

The workings of this mine, situated in the part of the field locally known as the "Underlap," are grouped in two independent sections separated by a large expanse of worked-out and barren ground. The position of the fan-shaft, sunk many years ago, has now become far from advantageous, and the main ventilating apparatus could not supply an adequate quantity of air to the No. 4 East section were it not assisted there by a 5-foot Stine fan, driven by a 15-horse-power d.c. motor and used as a booster. The problems presented in winter by the heavy inflow of water has been greatly simplified by the abandonment of the No. 6 East district, and, although severely taxed, the two electrically operated pumps used on the Main slope have so far proved themselves equal to their task.

In the No. 4 East district the coal is worked on the long-wall system, except in a part (reached during the year by a rock incline 250 feet in length) where the presence of a fairly thick and very brittle band of shale above the coal led to the introduction of a double-stall system. The West Incline section is hemmed in by a rather sharp upthrow, following the outcrop of the seam, and the abandoned workings of the No. 2 East district. This limits the operations to a strip seldom exceeding 350 feet in width, but traversed lengthwise by a slope more than 1,900 feet long. The coal is very thick near the fault and is worked in two lifts. Double-stalls are driven in the lower bench and the top coal and pillars are extracted on a retreating system. The latter operation is a difficult one, but has so far been skilfully conducted, with satisfactory results from the standpoints of both safety and recovery. The slope is drained by means of a siphon leading to old workings, a communication with these being established by means of a slant road driven through barren ground.

The haulage equipment consists of an Ottumwa hoist, driven by a 100-horse-power compound-wound d.c. motor, and three smaller units, one handling the output of the dip workings in the No. 4 East section and the other two being used in the West Incline district.

The mine is ventilated by twin fans of the Murphy type, driven by an Allis-Chalmers-Bullock d.c. motor, and passing a total quantity of 65,000 cubic feet a minute, against a water-gauge of 0.75 inch. This installation covers not only the requirements of the parts at present in operation, but does also ventilate No. 6 mine and a vast area of abandoned workings. In the course of the last inspection 20,100 cubic feet of air a minute was measured for the use of seventy men and nine horses. At the same time the No. 4 East booster was passing 15,000 cubic feet a minute.

During 1926 explosive gas was met on but a single instance in the course of inspection, a small quantity being found above the stringers in one stall. For a short time some slight difficulty was experienced with black-damp (mostly free nitrogen) issuing from the abandoned No. 6 East workings, but this condition was speedily remedied. Working-places were always found well timbered and the roadways in good condition. The mine is naturally damp and practically free from coal-dust.

No. 2 Mine.

James Strang, Manager; Robert L. Spruston, Overman; George Carson, David Crawford, William Gilchrist, R. N. Hamilton, Ed. Heyes, Joseph Watson, and William Wesnedge, Firebosses.

This is the most extensive mine being operated at Extension at the present time. Its workings are grouped in four widely separated sections, known as the East Incline, No. 2 Incline, No. 17 Incline, and the Old Motor-road districts.

In the East incline all operations are limited to the extraction of pillars. Some excellent recovery-work was done in this district during 1926; particularly in the No. 2 East level. The vast amount of cogging and stowing done in the course of previous operations did probably contribute to the success of the undertaking to a certain extent, but, nevertheless, the freedom from accidents and the high rate of recovery reflect the greatest credit upon the skill displayed by the officials in charge.

The district has an independent intake and is ventilated as a separate split. At the time of the last inspection there was 7,500 cubic feet of air a minute passing for the use of twenty-four men and five horses. The roadways were generally in good condition. Owing to the nature of the ground the timbering of the faces requires and receives the closest attention.

The No. 2 Incline section is worked almost entirely on the long-wall system. The seam varies greatly in thickness and quality and produces a considerable amount of refuse. The roof is a heavy and brittle shale. A roadway is at present being driven in barren ground from the new motor-road, its object being to afford another outlet to these workings, thus doing away with the long and costly haul to the incline. It had not yet reached the coal at the time of the December inspection.

No. 17 Incline section is opening new ground and extending in the general direction of the Nanaimo river. Here the seam is extremely irregular. It contains a shale-parting several feet thick at many points and extensive "pinch-outs" are very common. The roof is often frail, being sometimes little more than slightly indured clay, and the whole district is extremely wet. Haulage operations have been greatly simplified since the opening of the new motor-road, the coal being now transferred directly from the hoist to the electric locomotive without intermediate handling.

The ventilation was generally good, although black-damp appeared occasionally in the lower parts of the district. At the time of the December inspection all preparations had been made to rearrange it upon more favourable lines (particularly as far as the No. 3 East level is concerned) as soon as a communication had been established with the abandoned workings of No. 21 incline, which would then be used as an intake airway. The working-faces were all carefully timbered (an indispensable feature in this section, particularly on the East side) and the roadways were all in fairly good condition.

At the inner end of the Old Motor-road (No. 4 East level) some pillars left behind in former days, owing to the presence of a thick band of shale in the middle of the seam, have been almost completely removed. Along the No. 4 East level itself roadways intended to facilitate the eventual extraction of the roadside pillars are being driven at two different points.

With the exception of the East incline, all the workings of No. 2 mine are ventilated by an electrically driven Stine fan, installed at the top of a shallow shaft sunk in close proximity to the No. 17 Incline section, and maintaining a water-gauge of 0.9 inch. When last inspected the total quantity of air circulating through these parts of the mine amounted to 26,800 cubic feet a minute for the use of forty-six men and six horses.

No explosive gas was found in No. 2 mine during 1926 in the course of inspections. The presence of traces of black-damp in the air was detected on several occasions at a few points in the East Incline and No. 17 Incline sections.

Electrically driven hoists are handling the output of the Incline sections, delivering it directly to the new motor-road, on which it is hauled to the Main tunnel by an electric locomotive, a distance of 1⅓ miles in the case of No. 17 incline. A smaller locomotive of the same type is operated on the old No. 4 East level and takes care of the few working-places scattered along its course.

No. 3 Mine.

James Strang, Manager; Thos. Strang, Overman; Patrick Malone, James Nimmo, and Geo. Smith, Firebosses.

In this mine operations are now limited to the extraction of the pillars left along the main haulage-road. These have suffered considerably at some points from the great weight thrown upon them and the maintenance of roadways, always onerous here, has now become particularly arduous. Only five pairs of miners were employed at the time of the last inspection. Difficulties due to the presence of black-damp issuing from the old workings have not been infrequent, although they never reached the magnitude of those experienced before the direction of the air-current had been reversed. Working-places were always well timbered, and the roadways were kept in as good a condition as the nature of the ground in which they had to be maintained could allow them to be. The mine is extremely wet and, although a considerable amount of coal-dust was occasionally produced in badly crushed pillars, this may be said to have been most efficiently counteracted by the enormous volume of percolating water finding its way to the workings.

The mine is ventilated by electrically driven twin fans of the Murphy type, enclosed and run as blowers. The improvised casings do not comply with the most exacting requirements of such structures and a certain amount of vibration is unavoidable, but the whole apparatus is able to force 30,000 cubic feet of air a minute through the live parts of the mine and the adjoining extensive goaves, against a water-gauge of a trifle less than 0.9 inch. In the course of the December inspection the volume of the air-current passing out of the last working-place was found to be 10,000 cubic feet a minute. There were then twenty-four men and three horses in the mine.

No. 6 Mine.

James Strang, Manager; Thos. Wilson, Overman; Robert Houston and Walter Joyce, Firebosses.

No. 6 mine, adjoining the westernmost abandoned workings of No. 1, has been operated during the last four years in a part of the latter's territory that earlier operations had failed to reach. Its extent was limited by the presence of important faults and the end of 1926 found it very nearly worked out. No explosive gas was found in the course of inspection during 1926, the working-faces were always well timbered, and the roadways were kept in good condition, although generally very damp. Owing to the latter fact the mine was practically free from coal-dust.

No. 6 mine is ventilated by No. 1 fan, advantage being taken of the negative pressure maintained in the abandoned workings of the latter. At the time of last inspection 3,200 cubic feet of air a minute was passing into the mine for the use of twelve men and three horses.

The mechanical equipment consists of a portable boiler and a steam-hoist, which is used both to haul the coal up the slope and to lower it over the outside incline. The mine is drained by gravity, the water finding its way to the main haulage-tunnel through the old workings.

New Vancouver Slope.

James Strang, Manager; Thos. Strang, Overman; Hugh M. Davidson, John Pearson, and Joseph Tennant, Firebosses.

The object of the operations begun here towards the end of September, 1926, is to recover pillars and top coal, said to have been left in this mine at the time of its abandonment, about a quarter of a century ago. An advantageous location was finally selected and a slope was started on the full dip of the seam (which is fairly high at this point). A small electric hoist was brought over from Extension and a power-transmission line was installed. At the same time the mine was connected by a single-track incline, approximately 1,000 feet long, with the F. Beban Lumber Company's logging-railway, alongside which a short siding was provided. The erection of a small tipple fitted with a bar-screen completed the surface preparations.

In October the pillar left alongside the outcrop was cut through and heavily caved ground was encountered. At the time of last inspection three exploratory roadways were being driven through these goaves, some top coal being recovered in the process. They were well timbered and otherwise in good condition. Only seven men were employed underground on each shift. The mine is easily accessible by road from Nanaimo, where nearly all men employed are residing.

The ventilation depends upon the positive pressure, maintained in the abandoned workings extending between this opening and No. 3 mine by the latter's fan, which induces the circulation of a sufficient quantity of air to satisfy the present requirements.

No. 8 Mine.

William Clifford, Overman; John McLeod, Fireboss.

The presence of the Wellington seam, under conditions of thickness and quality rendering it workable, on the south side of the Nanaimo river and in the vicinity of McKay lake was proved by boring and surface prospecting several years ago. Operations began there towards the end of the month of May and were energetically prosecuted. Preparations for shipping were made at the outset. These included the construction of a spur from the Timberlands logging-railway, the installation of a siding, and the erection of a small tipple with screening facilities. The slope, driven in excellent coal, struck a sharp declivity, and after advancing for some time

on a very strong dip met some disturbed ground, which fact led to its abandonment. Another roadway was then started on a course forming an angle of about 40° with that of the original slope, and presented a most promising appearance at the time of the last inspection. The coal was thick and clean and the gradient very moderate. Two other exploratory roadways were also being driven at the time, both on the south side of the slope.

The mechanical equipment consists of two portable boilers, a hoist, a small centrifugal fan, and a duplex Worthington pump handling the rather heavy inflow of water underground. Steam is the only form of motive power used.

The output is brought from the mine to the Canadian Collieries Railway over the Victoria Lumber Company's track and as part of the logging-trains operated on the latter, but the construction of a special branch railway is being considered. The employees, who are all residents of Ladysmith, travel by the regular Extension trains as far as Lockner's Crossing, whence they complete their journey by means of motor conveyance specially provided.

Explosive gas has never been found here since the beginning of operations. At the time of the last inspection the fan was passing 2,100 cubic feet of air a minute for the use of seven men, and the working-faces and roadways were well timbered.

The following are the official returns from the Extension Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	94,929	.....	.....	.....
Sold for export to United States	38,384	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	133,313	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	27,317	.....	.....	.....
Used under colliery boilers, etc.	12,697	.....	.....	.....
Total for colliery use	.....	40,014	.....	.....
		173,327		
Stocks on hand first of year	4,127	.....	.....	.....
Stocks on hand last of year	6,611	.....	.....	.....
Difference added to stock during year	.....	2,484	.....	.....
Output of colliery for year	.....	175,811	.....	.....

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	21	.....	14	.....	35	.....
Whites—						
Miners	260	.....	.....	.....	260	.....
Miners' helpers	8	.....	.....	.....	8	.....
Labourers	75	.....	15	.....	90	.....
Mechanics and skilled labour	22	.....	56	.....	78	.....
Boys	.....	.....	16	.....	16	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	6	.....	47	.....	53	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	392	.....	148	.....	540	.....

Report by Harry E. Miard, Acting-Inspector.

WELLINGTON EXTENSION, No. 5 MINE, SOUTH WELLINGTON.

Thos. A. Spruston, Manager; William Brown, Overman; Daniel Caldwell, Robert Ewing, Neil McIntyre, and Thos. Robson, Firebosses.

This mine, situated in the Cranberry district near the South Wellington Station of the Esquimalt & Nanaimo Railway, is operated in the Douglas seam and adjoins the old Alexandria mine, from which it is separated by a safety-pillar having a minimum breadth of 300 feet. The seam varies greatly in thickness and quality. The weak sandy-shale floor shows much more frequent irregularities than does the roof, which may be either a sandy shale or a rather coarse grit. "Pinches" and "wants" are by no means uncommon. The coal, which finds a ready market both as domestic and boiler-fuel, belongs to the high-volatile variety.

The shipping facilities at the mine are excellent owing to its close proximity to the Esquimalt & Nanaimo Railway, to which it is connected by a short spur. The coal is sent over this road to the Canadian Collieries shipping centre at Ladysmith, from which it is distributed.

The tipple is provided with a revolving dump, chain car-haul, shaker screens, picking-table, loading-boom, and a scraper conveyor for boiler-fuel. The power plant consists of four Goldie & McCulloch return-tubular boilers, each having a capacity of 163 horse-power; two 250-volt, d.c., 112-kw. generators—one a Crocker-Wheeler directly connected to a 15 by 14 Ideal engine, the other an Allis-Chalmers coupled directly to a 16 by 16 Skinner engine; and a Sullivan air-compressor. A supply-pump completes the power-house equipment.

The entire output is hauled up the Main slope by a first-motion steam-hoist, with 18 by 36 engines, situated on the surface. A 100-horse-power electrically driven Ottumwa hoist is used on the No. 3 North Diagonal slope, but will soon be replaced by another, operated by compressed air, which will be situated much nearer the present workings. Three small compressed-air winches are also used in the No. 20 Left section.

The No. 6 South district was finally worked out during the year. The old level has been transformed into a sump of generous dimensions by the erection of a dam at its entrance, two pumps being installed there to deal with the large quantity of water flowing out of the abandoned workings.

The main pumping installation consists of a 6-inch 7-stage turbine-pump, having a capacity of 360 gallons a minute, directly connected to a Canadian General Electric shunt-wound, 75-horse-power, d.c. motor making 1,400 revolutions a minute. The discharge-pipe reaches the surface through a borehole about 460 feet in depth.

A new connection established between the Main slope and the North diagonal will eventually greatly simplify the haulage problem. Exploratory roadways have been started with the object of proving the territory left untouched by the No. 6 South workings.

The mine is ventilated by a 60-inch single-inlet Keith fan, electrically driven and having a capacity of 32,000 cubic feet a minute, against a water-gauge of 1 inch. At the time of the last inspection there was 16,000 cubic feet of air a minute circulating through the North side workings (at present the only part of the mine in operation) for the use of fifty-four men and six horses. A recent analysis of air from this split gave the following results: Oxygen, 20.44 per cent.; nitrogen, 78.97 per cent.; methane, 0.28 per cent.; carbon dioxide, 0.31 per cent. The mine is generally damp, but samples of dust are collected at regular intervals in the drier parts of the roadways. The most recent tests made showed that only between 50 and 66 per cent. of the material collected passed through a 28-mesh screen. These parts of the samples contained from 53.4 to 64 per cent. of ash and from 5 to 6.3 per cent. of moisture.

Small quantities of explosive gas were met on three different occasions during 1926 in the course of inspection. The presence of traces of sulphur in the air was occasionally noticed in the workings of the South side, now abandoned.

A well-appointed first-aid room and a motor-ambulance are provided. Three accidents to employees were reported during 1926, all having occurred underground. Two of them were due to falls of rock. In the third case a miner sustained two fractured ribs by falling off a scaffold in his working-place.

The following are the official returns from the Wellington Extension No. 5 mine for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	35,900			
Sold for export to United States				
Sold for export to other countries				
Total sales		35,900		
Used in making coke				
Lost in washing	7,652			
Used under colliery boilers, etc.	3,882			
Total for colliery use		11,534		
		47,434		
Stocks on hand first of year				
Stocks on hand last of year				
Difference added to (or taken from) stock during year				
Output of colliery for year		47,434		

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	6		2		8	
Whites—						
Miners	72				72	
Miners' helpers						
Labourers	19		13		32	
Mechanics and skilled labour	5		9		14	
Boys			6		6	
Japanese						
Chinese						
Indians						
Totals	102		30		132	

Report by Thos. R. Jackson, Inspector.

Granby Consolidated Mining, Smelting and Power Co., Ltd.

J. T. Crabbs, President, New York City; Chas. Bocking, Vice-President, Anyox, B.C.; R. H. Plommer, Treasurer, Vancouver, B.C.; Robert Henderson, Superintendent, Cassidy, B.C.

No. 1 Mine.

Robert Henderson, Manager; Alexander McLaughlin, Overman; Albert Radford, Matthew Meek, Tom Tullin, J. Stewart, and Tom Cunliffe, Firebosses.

Granby Colliery No. 1 mine is situated some 7 miles in a southerly direction from Nanaimo. The main entrance to this mine is by a slope 7 by 14 feet in the clear to allow for a double track and is timbered by 12- by 14-inch framed sets, 4 feet centre to centre. A separate manway is provided for a travelling-road and it at the same time forms an intake airway. The Douglas seam, which varies from 3 to 20 feet in thickness, is worked at this mine and the system of work adopted is pillar and stall.

This mine is ventilated by a Sirocco fan having a capacity of 150,000 cubic feet of air a minute, with a 3.5-inch water-gauge. This fan is driven by a 150-horse-power Westinghouse electric motor. The main hoist is a Vulcan 18- by 36-inch double-drum, second-motion hoist. The mine-cars are large and have a carrying-capacity of 1.75 tons of coal. No mules or horses are used in this mine. Compressed air is used underground for the driving of drills, pumps, and winches. A Rand cross-compound condensing compressor, with capacity of 2,000 cubic feet

of air a minute, furnishes the power. Electric power is supplied by an Allis-Chalmers 450-kw. generator (2,300-volt. 3-phase, 60-cycle, 300 r.p.m.), both direct-connected to vertical high-speed engines of the Goldie & McCulloch type. The remainder of the electric equipment is of the Westinghouse type. A Worthington fire-pump, capacity of 1,000 gallons a minute, size 18 by 10 by 12 inches, is kept in readiness for emergency.

A large house called the "change-house" is used by the miners for the purpose of changing their clothes. An attendant is in charge whose duty is to keep the place clean, well ventilated, and heated. The heat produced in the drying-room is sufficient to make the mine clothes perfectly dry and comfortable for the workmen to don before they go to work in the mine. The change-house is equipped with steel lockers, which are heated with steam-coils from underneath. There are shower-baths and large lavatory, including every convenience for the use of the workmen.

The intake air is heated by exhaust steam passing through radiators and allowed to travel down the mine, thus to some extent preventing the drying-out of the mine. Very fine fog sprays are placed about every 150 feet apart on the Main slope and these operate automatically for twenty minutes out of every hour. Farther in the mine the main roadways are liberally treated with inert dust and water to such extent that the sample tests for coal-dust show an incombustible content in compliance with the requirements of the "Coal-mines Regulation Act."

Edison head-lamps are used by the employees, except in the case of officials, who use the Wolf flame safety-lamp for testing purposes.

During December, 1926, Nos. 6, 6½, and 7 North levels were inspected and general conditions were found to be good. In Main slope and Manway slope there was a total of 118,640 cubic feet of air a minute passing. No explosive gas was found, and the timbering, roads, and ventilation were also good. A good percentage of inert dust and moisture was contained among the coal-dust, making the dust comply well with the requirements of the "Coal-mines Regulation Act."

In No. 6 North level split there was 31,900 cubic feet of air a minute passing for the use of twenty-five men.

In one place in No. 4 South level about 12 cubic feet of explosive gas was found in a roof-cavity and quite a quantity in the gob off Main heading, No. 7 South level. The ventilation, timbering, and roadways were found to be in good condition, sections practically free from coal-dust owing to liberal supply of incombustible dust, and a generous natural supply of water.

In No. 7 South split there was 18,000 cubic feet of air a minute passing for the use of thirty men. No blasting is permitted in No. 7 South section.

The following are the official returns for the Granby Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	112,439	.....	.....	.....
Sold for export to United States	9,938	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	122,377	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	30,067	.....	.....	.....
Used under colliery boilers, etc.	16,181	.....	.....	.....
Total for colliery use	.....	46,248	.....	.....
		168,625		
Recovery from dump	1,207	.....	.....	.....
Stocks on hand first of year	1,302	.....	.....	.....
	2,509			
Stocks on hand last of year	1,170	.....	.....	.....
Difference taken from stock during year	.....	1,339	.....	.....
Output of colliery for year	.....	167,286	.....	.....

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

Character of Labour.	UNDERGROUND.		ABOVE GROUND.		TOTALS.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		$
Supervision and clerical assistance	8	6.00	9	8.20	17	7.17
Whites—						
Miners	121	6.31	.....	.....	121	6.31
Miners' helpers	.....	.....	.....	.....	.....	.....
Labourers	.....	.....	34	.....	34	.....
Mechanics and skilled labour	50	4.24	20	3.93	70	4.08
Boys	.....	.....	.....	.....	.....	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	179	5.72	63	4.54	242	5.41

REPORT BY HARRY E. MIARD, ACTING-INSPECTOR.

East Wellington Coal Company.

H. G. Heisterman, President, Victoria, B.C.; P. S. Fagan, Secretary-Treasurer, Victoria, B.C.

EAST WELLINGTON COLLIERY.

William Wilson, Manager; William Roper, Overman; George Gray, Daniel McMillan, George Oswald, Chas. Webber, and Joseph Wilson, Firebosses.

This mine, situated in the Mountain district, is operated in the Wellington seam. Its territory extends from the boundary of the old Jingle Pot to the abandoned workings of the Chandler mine operated in the late nineties. In the present workings the coal seldom exceeds a thickness of 2 feet, but is of superior quality, particularly as domestic fuel. It might be added that, owing to the nature of the seam and the method of working followed, an abnormally large percentage of lump coal is produced.

The seam is reached by two slopes, 1,320 and 1,220 feet in length respectively, of which the former is the main haulage-road and intake, the other being used as a return airway. The Main slope has a gradient of about 25°. The workmen travel in and out of the mine in a special trip of six cars, reserved exclusively for the purpose, all connected, in addition to the ordinary couplings, by a ⅞-inch steel rope running through the whole train and connected to the main rope shackling.

The coal worked on the long-wall system is undermined by two Sullivan chain-cutters and loaded by hand. The present workings consist of two walls, respectively 400 and 500 feet long. They are separated by a fault with a vertical throw of 10 feet, and, in addition, a local pinch-out 35 feet long has been met near the centre of the lower wall and is greatly interfering with the operation of the mechanical coal-cutters. Gateways are driven on 32-foot centres, the bottom is brushed (although a little ripping of roof is done occasionally), and the top is secured by pack-walls and alternate cogs. This method provides an ample supply of stowing material. At the faces the method of timbering followed is that commonly known as "post and strap," necessary in order to permit the operation of the coal-cutting machines. The roof is a sandy shale, occasionally weak. The roadways are fairly well kept, although frequently of small cross-sectional area.

The entire output is brought to the foot of the Main slope by a main and tail haulage, which is also bringing the coal from the lower wall to the Main level with the assistance of a small auxiliary hoist. The output of the upper wall is brought down over a short incline by another

hoist. All underground machinery is operated by compressed air, except the Main slope pumps, which are steam-driven.

Extensive prospecting operations were carried on during 1926, rock-drifts following the seam being driven on the north-west side over a total distance of 1,350 feet. This roadway is ventilated by a small centrifugal fan, driven by a compressed-air engine, and a line of 12-inch galvanized-iron tubes.

The power plant consists of four return-tubular boilers, with an aggregate rating of 476 horse-power; two Canadian Rand tandem compressors of 550 cubic feet capacity each; a Norwalk tandem compressor with a capacity of 1,650 cubic feet; and two small electric generators supplying power for lighting, charging lamp-batteries, etc.

A new tipple has just been completed. It is equipped with a rotary dump, Marcus screens, boiler-coal elevator, and a simple but extremely convenient loading arrangement. The whole was erected at a very moderate cost and reflects considerable credit upon the ingenuity of its designers.

Electric cap-lamps are used exclusively by the workmen, while officials are provided with safety-lamps of the Wolf type for gas-testing purposes.

Early in 1926 the abandoned workings on the South side were sealed off, following instructions issued by James Dickson, Inspector, owing to the difficulty experienced in keeping them properly ventilated and clear of gas. In the parts of the mine at present in operation inflammable gas was met once in the course of inspection, in a blind end of the north-west prospect-tunnel.

The ventilation was generally good, but will be greatly improved, particularly in the case of the upper wall, by a new airway at present being driven. At the time of the last inspection 19,800 cubic feet of air a minute was measured for the use of fifty-eight men and three horses. Samples of return air gave the following average analysis: Oxygen, 20.79 per cent.; nitrogen, 78.93 per cent.; methane, 0.15 per cent.; carbon dioxide, 0.13 per cent.

A fatal accident occurred at the colliery during 1926, a loader being killed by the fall of a slab of roof-rock under which he was preparing to set up a "strap."

The following are the official returns from the East Wellington Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	36,153	.....	.....	.....
Sold for export to United States	.....	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	36,153	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	1,625	.....	.....	.....
Used under colliery boilers, etc	5,955	.....	.....	.....
Total for colliery use	.....	7,580	.....	.....
		43,733		
Stocks on hand first of year	359	.....	.....	.....
Stocks on hand last of year	100	.....	.....	.....
Difference taken from stock during year	.....	259	.....	.....
Output of colliery for year	.....	43,474	.....	.....

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	2	.....	3	.....	5	.....
Whites—						
Miners	70	.....	.....	.....	70	.....
Miners' helpers	.....	.....	.....	.....	.....	.....
Labourers	44	.....	4	.....	48	.....
Mechanics and skilled labour	17	.....	9	.....	26	.....
Boys	6	.....	6	.....	12	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	12	.....	12	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	139	.....	34	.....	173	.....

REPORT BY THOS. R. JACKSON, INSPECTOR.

Nanoose-Wellington Collieries, Ltd.

Head Office—Lantzville, B.C.

Alvin W. Defiel, Chairman, St. Paul, Minn.; John A. Coleman, Managing Director, Lantzville, B.C.; Russell H. Phinney, Secretary, St. Paul, Minn.; Martin N. Olsen, Treasurer, Lantzville, B.C.; J. W. Jemson, Superintendent, Lantzville, B.C.

LANTZVILLE MINE.

James B. Jemson, Superintendent; Joseph Neen, Overman; H. M. Davidson, W. H. Moore, W. Angell, W. Bradley, D. Caldwell, W. Nuttall, T. Chapman, and A. Derbyshire, Firebosses.

This mine was operated in the early part of 1926 by the Nanoose Collieries, Limited, and was then closed down. The property was later purchased by the Canadian Collieries (Dunsmuir), Limited, who partly dismantled the plant and filed notice of abandonment of the mine on October 2nd, 1926.

The following are the official returns from the Nanoose-Wellington Collieries for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	21,174	.....	.....	.....
Sold for export to United States	.....	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	21,174	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	4,235	.....	.....	.....
Used under colliery boilers, etc.	2,050	.....	.....	.....
Total for colliery use	.....	6,285	.....	.....
		27,459		
Stocks on hand first of year	910	.....	.....	.....
Stocks on hand last of year	.....	.....	.....	.....
Difference taken from stock during year	.....	910	.....	.....
Output of colliery for year	.....	26,549	.....	.....

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	20	.....	7	.....	27	.....
Whites—						
Miners	99	.....	.....	.....	99	.....
Miners' helpers	21	.....	.....	.....	21	.....
Labourers	38	.....	7	.....	45	.....
Mechanics and skilled labour	25	.....	13	.....	38	.....
Boys	.....	.....	6	.....	6	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	21	.....	21	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	203	.....	54	.....	257	.....

REPORT BY HARRY E. MIARD, ACTING-INSPECTOR.

Island Collieries, Ltd.

(KING & FOSTER COAL CO., LTD.)

Head Office—Herald Building, Nanaimo, B.C.

NOS. 2 AND 5 MINES.

Henry Shepherd, Superintendent; S. K. Mottishaw, Manager; John Michek and George Stewart, Firebosses.

These mines are operated in the Wellington seam, near North Wellington. No. 5 is in the Main, while No. 2 mine, which is the most important, is in the Upper seam. No. 2 mine is entered by means of two slopes, several hundred yards apart, but only one of which is at present in use. The coal is worked by long-wall, the only method applicable in this case owing to the large amount of refuse to be handled. At many points the seam has been dislocated and the roof fractured by the extraction of pillars in the Lower seam, and mining operations are seriously complicated thereby.

No. 2 mine is ventilated by a small steam-driven Sheldon fan. At the time of the last inspection 7,500 cubic feet of air a minute was supplied to thirty-two men and six horses. No explosive gas has yet been found (there is only 30 feet of cover and this is fissured at frequent intervals), but black-damp has occasionally proved troublesome. All underground workmen use the Edison storage-battery electric cap-lamps exclusively. Officials are provided with flame safety-lamps of the Wolf type for testing purposes. The mine is damp and free from coal-dust.

The coal is hauled up the slope by a small second-motion hoist, supplied with steam by a vertical boiler, and is taken to the screening and loading plant by a gasolene-locomotive. The latter installation is situated close to the Esquimalt & Nanaimo Railway at a distance of about a mile from the mine.

In No. 5 mine an effort has been made to penetrate a fault against which the former workings had been stopped. At some points there the roof is little more than gravel and requires the utmost care in timbering. A vertical boiler and a small steam-hoist compose all the surface equipment at this mime. Only two men were employed underground at the time of the last inspection.

An accident was reported from this colliery during February, 1926. Two men engaged in repairing a shallow shaft, known as No. 7, fell a distance of 40 feet when their scaffolding broke. One of them escaped with a severe shaking, but the other sustained very serious injuries.

The following are the official returns from the Island Collieries for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	13,148	.....	.....	.....
Sold for export to United States	.....	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	13,148	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	3,254	.....	.....	.....
Used under colliery boilers, etc	200	.....	.....	.....
Total for colliery use	.....	3,454	.....	.....
		16,602		
Stocks on hand first of year	.....	.....	.....	.....
Stocks on hand last of year	.....	.....	.....	.....
Difference added to (or taken from) stock during year	.....	.....	.....	.....
Output of colliery for year	.....	16,602	.....	.....

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	3	.....	3	.....	6	.....
Whites—						
Miners	31	.....	.....	.....	31	.....
Miners' helpers	.....	.....	.....	.....	.....	.....
Labourers	12	.....	16	.....	28	.....
Mechanics and skilled labour	.....	.....	6	.....	6	.....
Boys	1	.....	.....	.....	1	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	47	.....	25	.....	72	.....

NORTHERN INSPECTION DISTRICT.

Report by T. J. Shenton, Inspector.

Telkwa Collieries Co., Ltd.

J. McNeil, Managing Director; A. Robinson, Mine Foreman.

GOAT CREEK.

This mine worked during the first three months of 1926 and reopened again in October; then worked during the remainder of the year with an average of eight men employed.

No trace of inflammable gas was found on the various inspections and the general conditions were found to be in compliance with the "Coal-mines Regulation Act."

The following are the official returns from the Telkwa Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	1,260	.....	.....	.....
Sold for export to United States	.....	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	1,260	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in washing	.....	.....	.....	.....
Used under colliery boilers, etc	.....	.....	.....	.....
Total for colliery use	.....	.....	.....	.....
Stocks on hand first of year	.....	.....	.....	.....
Stocks on hand last of year	.....	.....	.....	.....
Difference added to (or taken from) stock during year	.....	.....	.....	.....
Output of colliery for year	.....	1,260	.....	.....

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$				
Supervision and clerical assistance	1	6.00	.....	.....	1	.....
Whites—						
Miners	2	5.00	.....	.....	2	.....
Miners' helpers	2	4.00	.....	.....	2	.....
Labourers	1	4.00	.....	.....	1	.....
Mechanics and skilled labour	1	5.00	.....	.....	1	.....
Boys	.....	.....	.....	.....	.....	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	7	.....	.....	.....	7	.....

NICOLA-PRINCETON INSPECTION DISTRICT.

Report by John G. Biggs, Inspector.

I have the honour to herewith submit my annual report as Inspector of Mines for the Nicola-Princeton District for the year ended 1926.

The coal-mining companies operating in the district during the past year were: The Coalmont Collieries, Limited; Middlesboro Collieries, Limited; Keystone Coal Company; Tulameen Valley Coal Company; Princeton-B.C. Colliery, Limited; the Southern Okanagan Coal Company, Limited; and the Sunshine Coal Company.

All the above companies continued to operate during the whole of the year with the exception of the Princeton-B.C. Colliery Company, which ceased operations during the month of February, and the Southern Okanagan Coal Company, which suspended operations during the month of October.

As usual, there has been several small operations where the work done has been entirely of a prospective nature for the purpose of proving the ground. The Sunshine Coal Company, which is comprised of three miners residing in the city of Merritt, has practically done nothing during 1926. The British American Coal Company, a Bellingham syndicate, has followed an aggressive prospecting policy at the Vaydo property, situated at Deer valley, in the East Princeton District, under the supervision of Alfred Gould during the year. An adit-level was extended

a distance of some 1,600 feet, with a branch level 400 feet from the face of the level, for the purpose of proving some coal-showings that have been exposed in an old level above. These operations were suspended during the month of November. The Southern Okanagan Collieries, Limited, after being inactive for some time, commenced work at the White Lake basin during the early part of the spring, where a number of men were employed not only in exposing the seams of coal, but in the installation of the necessary equipment and machinery for the operation of a coal-mine; however, this work was suspended during the month of October.

Probably the most important prospective work done in this district during the present year was conducted by R. R. Wilson, of Victoria, on coal leases situated about 2 miles west of the town of Princeton, in close proximity to the Kettle Valley Railway and on the opposite side of the river to the holdings of the Tulameen Valley Coal Company. A number of men have been engaged during most of the year in prospecting the side of the mountain by saps and short tunnels, while a drilling contract was let and three diamond-drill holes were put down at different locations on this property, with the result that a section of the whole strata was procured to the base of the measures, which proved the existence of several seams of coal.

During the spring of 1926 there was rather a serious mine fire to deal with at the No. 3 seam operations of the Keystone Coal Company, Limited, when the gobs commenced to heat and the resulting gases came back into the workings. This occurrence necessitated the sealing-off of this mine near the entrance to the slope and the fan-drift until such time as a larger and more effective fan could be installed; on this being completed the seals of the mine were opened and the fan put into operation. Success was achieved in cleaning out this mine and sealing off the affected area and work was recommenced.

Conditions in regard to the dangers of coal-dust as required by the regulations established by section 128, 1924, have been well attended to in this district during 1926. Samples of material have been taken from the roads of the mines and the result of analysis mailed to this office. With slight exception, these tests have shown the material contained incombustible matter in excess of the requirements of the said regulations.

It was not found necessary to treat the roads of the mines with incombustible dust, with the exception of the Main slope of the No. 4 mine of the Coalmont Collieries, Limited, where it was found, owing to the large volume of air entering this mine during the fall of 1926, a large amount of moisture was absorbed in the upper portion of the slope. This is required to be cleaned from time to time and treated with an inert and incombustible material taken from the surface.

Inspection on behalf of workmen, as provided for by General Rule 37, was taken advantage of by the workmen at the various mines during 1926 and found to be a great help in assisting to maintain safe conditions, and the miners are thanked for giving their attention to this important matter.

It is gratifying to have the pleasure to again report another year free from fatal accidents in the operating of coal-mines in this district. This may be greatly attributed to the care taken by the officials and the employees exerting every effort to make coal-mining, which at the best of times is an hazardous occupation, as safe as possible.

There were five accidents reported to this office during 1926, all of which were reported as required by section 71 of the "Coal-mines Regulation Act." Four of these accidents occurred at the operating mines of the Coalmont Collieries, Limited, while one occurred at the No. 1 mine of the Tulameen Valley Coal Company.

Middlesboro Collieries, Ltd.

E. W. Hamber, President, Vancouver, B.C.; C. S. Raphael, Vice-President, Vancouver, B.C.; Thomas Sanderson, Secretary, Vancouver, B.C.; C. M. O'Brian, Treasurer, Vancouver, B.C.; Robert Fairfoull, Superintendent, Merritt, B.C.

MIDDLESBORO COLLIERY.

Robert Fairfoull, Manager.

This colliery is situated 1 mile south of the city of Merritt and is connected by a branch line off the Kettle Valley Railway. At present it constitutes the chief coal operations in the Nicola basin. The mine plant is situated at the foot of the hill in the valley, while the mining operations are being conducted in the adjoining hill and are generally above the elevation of

the mine-tipple. The measures are found to be lying at a high angle of inclination, dipping towards the centre of the basin and cropping near the apex of the hill.

During 1926 work has been concentrated on the development of new coal-showings exposed during the year 1925, situated 2,000 feet south and at an elevation of 200 feet above the mine-tipple, where the management of this company was successful in uncovering two valuable seams of coal, with an average thickness of 6 feet, in the upper series. The general mining conditions were found to be very favourable, with the result that this company is at present opening an entirely new area of coal in the Nicola field.

For the purpose of developing this portion of the field necessitated the grading for a mine-track alongside of the hill to the siding situated near the entrance to the No. 4 East mine, a distance of some 1,600 feet, while a large siding, provided with four mine-tracks 500 feet in length, completed near the entrance to the new tunnels makes ample provision for the storage of a large number of mine-cars. For power purposes 2,000 feet of 4-inch air-line has been laid from the power-house to these new operations, which is used for driving hoists and coal-cutting machines that have been installed during December, 1926.

No. 4 East Mine.

A. D. Allen, Overman; Thomas Rowbottom, Fireboss.

This mine is situated south and on the same elevation as the mine-tipple. It has been developed by a pair of 15° slopes driven from the surface croppings and operating a section of the No. 4 seam lying behind a fault that could not be conveniently reached from the old No. 4 mine.

Ventilation is produced by a small steam-driven double-inlet fan situated near the entrance to the counter-slope. During the visit of inspection ventilation measured showed 7,000 cubic feet of air a minute passing into this mine for the use of sixteen men, the roads and airways being free from any trace of explosive gas, while a good current of air was passing around the working-faces. The stoppings and brattice were in good order. The working-faces were found well timbered and a sufficient supply of suitable timber provided for the use of the workmen. The roads were well timbered and in fairly good condition.

No. 2 North Mine.

James Fairfoull, Overman; William Ewart, William Hallinan, and Robert Drybrough, Firebosses.

This is a new mine situated 2,000 feet south of the entrance of the No. 4 East mine and commenced operations during the year 1925. The measures are found in the form of a basin having a general pitch east of 60° near the surface of the hill and gradually diminish in pitch towards the centre of the basin; the pitch at the face of the slope being about 12°.

Development consists of an adit-level commenced at the outcrop at the side of the hill, from which headings have been driven to the surface above, which is reached at an approximate distance of 400 feet on the lay of the coal. Pillars have been blocked out and are at present being extracted above this level.

Slopes have been driven to the dip from the surface at the same elevation as this level and have reached a distance of 600 feet, provided with the necessary crosscuts, from which levels have been started at intervals and extended a limited distance.

At this mine when last visited there was 13,500 cubic feet of air a minute passing into the workings for the use of thirty-one men. No trace of explosive gas was found. The working-places were well timbered and a sufficient supply of suitable timber provided for the use of the workmen. The roads were well timbered and in good condition and, being naturally wet, were free from dangerous coal-dust.

No. 3 North Mine.

Andrew McKendrick, Overman; Matthew McKibben and William Adamson, Firebosses.

The entrance of this mine is situated at the centre of the large siding 150 feet north of the No. 2 North mine opening. Operations were commenced from the surface croppings during the year 1925. The measures are found to be lying in full conformation at a high angle of inclination at the surface and have a general pitch east towards the centre of the basin.

The developments of the No. 3 mine follow very closely the developments of the No. 2 mine. It is entered by an adit-level from the surface and has been extended a distance of 1,500 feet,

from which headings have been driven to the surface, a distance of approximately 400 feet, greatly facilitating the ventilation of the mine. A slope has been driven to the dip and has reached a distance of 350 feet; levels are being driven from this for the purpose of development.

At this mine when last visited ventilation measured showed 5,400 cubic feet of air a minute passing into the workings for the use of sixteen men. No trace of gas was found and there was a fairly good current of air conducted around the working-faces, the brattice and stoppings also being in good order.

The working-places were well timbered and a sufficient supply of suitable timber was provided for the use of the workmen. The roads were well timbered and in good condition.

With the exception of two mining-machines which were placed in operation during December, 1926, at the No. 3 North mine, the coal has been mined by hand. Edison electric safety-lamps are used by all the employees underground, while flame safety-lamps of the Wolf magnetic-lock type are used by the officials for inspection purposes.

No change was made in the power plant during 1926. It consists of four return-tubular boilers having an aggregate horse-power of 600, used for driving a Canadian Rand 2-stage cross-compound air-compressor having a capacity of 2,000 feet a minute, which provides power for mine-hoists, coal-cutting machines, and mine-fans, while a 2,300-volt alternator is in use for providing power for surface and lighting purposes.

Copies of the "Coal-mines Regulation Act," special rules, and plans of the mines are well posted at these mines.

The following are the official returns for the Middlesboro Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	39,587	.....	.....	.....
Sold for export to United States	.....	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	39,587	.....	.....
Used in making coke	.....	.....	.....	.....
Used under colliery boilers, etc	4,003	.....	.....	.....
Total for colliery use	.....	4,003	.....	.....
		43,590		
Stocks on hand first of year	357	.....	.....	.....
Stocks on hand last of year	241	.....	.....	.....
Difference taken from stock during year	.....	116	.....	.....
Output of colliery for year	.....	43,474	.....	.....

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		
Supervision and clerical assistance	10	.....	3	.....	13	.....
Whites—						
Miners	40	4.50–6.00	.....	.....	40	.....
Miners' helpers	18	4.00	.....	.....	18	.....
Labourers	14	4.00–4.50	11	4.00–4.50	25	.....
Mechanics and skilled labour	.....	.....	10	4.50–5.50	10	.....
Boys	.....	.....	4	2.50	4	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	82	.....	28	.....	110	.....

Keystone Coal Co., Ltd.

F. R. Anderson, President, Vancouver, B.C.; C. W. St. John, Vice-President, Vancouver, B.C.; J. S. Salter, Secretary, Vancouver, B.C.; J. F. Higginbotham, Treasurer, Vancouver, B.C.; Joseph Graham, Superintendent, Merritt, B.C.

KEYSTONE COLLIERY.

John T. Brown, Manager; Richard Dunnigan, Fireboss.

This company is the successor to the Fleming Coal Company, operating in the north-west portion of the Nicola basin, which consists of a plateau situated about 2 miles west and 500 feet above the city of Merritt. The measures lie at a high angle of inclination, pitching towards the west, with several of the seams cropping near the surface.

These operations are small and consist of a pair of slopes driven from the surface croppings of the No. 2 seam, where the bottom or lower level, at present operating, is situated about 320 feet from the entrance to the mine at the western extremity of this portion of the coal-basin. The operations in this mine have been greatly retarded by excessive faulting, causing mining to be very difficult.

Work at present consists of the extraction of pillars in close proximity to the Main slope, with the result that operation in this mine is limited to a very few months, as the coal is being drawn back towards the surface croppings and no development-work at present being done.

When last visited eight men were employed underground in this mine. Ventilation measured showed 6,000 cubic feet of air a minute passing into this mine. The stoppings and brattice were in good order, the working-places well timbered, and a sufficient supply of suitable timber was provided for the use of the workmen. The roads were also well timbered and in good condition.

A fair amount of work was done during 1926 for the purpose of proving the No. 2 seam from the surface outcrop on the north side of this property. A 30° slope has been driven a distance of about 140 feet from the surface croppings on the No. 2 seam of coal, which is found to be about 5 feet in thickness, lying at a high angle of inclination and intersected by a rock-band, the intention being to prove this seam by means of slopes, near the bottom of which the measures below will be explored for the purpose of proving the existence of the No. 1 seam on this property.

Edison electric lamps are used by the workmen and flame safety-lamps of the Wolf type are used by the officials for inspection purposes.

No changes were made to the surface plant by this company during 1926.

The following are the official returns of the Keystone Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	7,410			
Sold for export to United States				
Sold for export to other countries				
Total sales		7,410		
Used in making coke				
Used under colliery boilers, etc.	327			
Total for colliery use		327		
		7,737		
Stocks on hand first of year	100			
Stocks on hand last of year	80			
Difference taken from stock during year		20		
Output of colliery for year		7,717		

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		$
Supervision and clerical assistance	2	6.00	.....	.....	2	6.00
Whites—						
Miners	5	5.00	.....	.....	5	5.00
Miners' helpers	4	4.25	.....	.....	4	4.25
Labourers	.....	.....	3	4.00	3	4.00
Mechanics and skilled labour	.....	.....	2	4.75	2	4.75
Boys	.....	.....	.....	.....	.....	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	11	.....	5	.....	16	.....

Coalmont Collieries, Ltd.

W. J. Blake Wilson, President, Vancouver, B.C.; General J. W. Stewart, Vice-President, Vancouver, B.C.; A. H. Douglas, Secretary, Vancouver, B.C.; D. McLeod, Treasurer, Vancouver, B.C.; D. McLean, Superintendent, Coalmont, B.C.

COALMONT COLLIERY.

Donald McLean, General Manager; George Murray, Manager.

This colliery is the largest and most important coal operation in this district. It is situated on the North fork of Granite creek at an elevation of 1,600 feet above and 4 miles by road from the town of Coalmont. The tipple and power plant is situated in close proximity to the Kettle Valley Railway, the coal being transmitted over the mountain by an overhead tramway in buckets that constitute the body of the mine-cars, which have a capacity of about 1 ton.

The mines at present operating are known as the No. 3 and No. 4 mines, separated by a large fault or dyke which cuts across the basin, and while these mines are operating in the same seam of coal in the Coalmont series, they are two entirely separate and distinct operations. The No. 3 mine, generally known as the "Wilson tunnel," was the oldest and largest of these operations. It was developed by adit-levels following the strike of the seam, a distance of some 3,000 feet. Considerable work was done to the dip by three haulage-slopes, but owing to the fact that a destructive fire developed in this mine during the spring of 1925, which necessitated the sealing-off of this mine on the levels a short distance outside of the No. 1 slope, the mine was closed for some time. The mine was successfully reopened during the fall of 1925 and continued to operate until the spring of 1926; since this time the operation of No. 3 mine has been of an intermittent nature.

The No. 4 mine was opened during the year 1924 and is situated 1 mile west of and at an elevation of 400 feet above the entrance to the No. 3 mine. It continued to operate during the whole of 1926 and is at present the largest and most important development on this property.

During the latter part of 1926 work was commenced driving a rock tunnel situated near the foot of the No. 4 mine surface incline, which is on the same elevation and about 1½ miles away from the top terminal of the overhead tramway. This will encounter the lower portion of the mine-workings and as a result will greatly shorten and simplify the haulage by eliminating the upper portion of the Main slope and the surface incline.

No. 3 MINE.

James Simm and Harry Hopkins, Firebosses.

The entrance to this mine is situated on the same elevation and a short distance west of the top terminal of the overhead tramway and is developed by a well-timbered 8 by 12 level following the strike of the seam. It is generally known as the "Wilson tunnel." Operations

have been very intermittent at this mine during 1926 and consisted of the extraction of pillars in close proximity to the Main level and the "skipping" of pillars in the upper portion of the No. 2 slope. The workings to the dip are filled with water, which collected during the time this mine was sealed off. This is at present being drawn off by a compressed-air pump, which is situated on the slope and is moved forward as the water recedes.

The coal is conveyed from the mine to the tipple by an overhead tramway 2½ miles in length, with a difference of elevation between the top terminal and the lower one at the tipple of some 1,600 feet. The buckets, which consist of the body of the mine-cars, have a capacity of 1 ton and are lifted from the mine-car frame by means of carrier-arms to an overhead rail connected to the tramway cables, where they are attached to a ¾-inch travelling cable and supported on the empty side by a 1⅛-inch locked coil cable, while the full buckets are carried by a stationary 1⅝-inch track strand, reversible lay, smooth-coil crucible-steel cable. The running cable is controlled by a 50-horse-power constant-speed a.c. motor connected by gearing to a "Fowler Grip" pulley, which is also provided with a friction-brake operated from the control-house.

This tramway was succesfully operated during 1926 and has given very little trouble, the normal capacity being limited to about 60 tons an hour.

The power plant is situated at the town of Coalmont, near the tipple, and consists of two 25-horse-power cross-drum horizontal-inclined water-tube boilers, fitted with forced draught, duplicate pumps and feed-water heaters attached, and are used for driving a 600-horse-power Corliss cross-compound condensing-engine coupled direct to a G.E. 3-phase, 60-cycle, 480-ampere, 550-volt generator running at a speed of 150 r.p.m., this voltage being stepped up to 10,000 by transformers situated near the power-house and taken over the mountain by high-tension wires to transformers situated near the mine, where the voltage is reduced to 550 volts for power and 110 volts for lighting purposes. However, owing to the extension of the underground developments and to the fact that the larger portion of the workings are dipping, more power was required, and as a result during 1926 a new 250-horse-power boiler has been added to the power plant, while a 500 D.W. Westinghouse-Parson's steam-turbine generator set is being installed, which will duplicate the plant in use and provide a reserve power and is expected to be in operation during the early part of 1927.

This plant is supplemented by a small steam plant situated at the mine, consisting of two Jenks return-tube boilers, and is used for operating a steam-driven air-compressor for the pump situated in the No. 3 mine and also heating the dining-room, rooming-house, wash-house, machine-shop, and mine offices.

A well-appointed doctor's office, steam-heated and supplied with hot and cold water, is situated at the camp, with a doctor in daily attendance, while a first-aid man is in attendance at all times.

A mine-rescue station with smoke-room is provided and is equipped with five sets of Gibbs self-contained breathing apparatus, pulmotor, and charging-pump, while a good supply of oxygen and regenerators are on hand.

Edison electric safety-lamps are in use by all the employees underground at this colliery, while safety-lamps of the Wolf type are in use by the officials for inspection purposes.

Coal Creek Colliery, Fort Steele M.D.

The following are the official returns from the Coalmont Collieries for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	113,974	.....	.....	.....
Sold for export to United States	43	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	114,017	.....	.....
Used in making coke	.....	.....	.....	.....
Used under colliery boilers, etc	7,441	.....	.....	.....
Total for colliery use	.....	7,441	.....	.....
		121,458		
Stocks on hand first of year	.....	.....	.....	.....
Stocks on hand last of year	.....	.....	.....	.....
Difference added to (or taken from) stock during year	.....	.....	.....	.....
Output of colliery for year	.....	121,458	.....	.....

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		$
Supervision and clerical assistance	13	6.63	13	6.03	26	6.33
Whites—						
Miners	114	7.48	.....	.....	114	7.48
Miners' helpers	.....	.....	.....	.....	.....	.....
Labourers	61	4.86	85	4.27	146	4.52
Mechanics and skilled labour	1	5.77	24	4.99	25	5.02
Boys	3	3.83	2	3.50	5	3.70
Japanese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	1	2.64	1	2.64
Chinese	.....	.....	.....	.....	.....	.....
Totals	192	6.53	125	4.56	317	5.75

Princeton-B.C. Colliery Co., Ltd.

George E. Stringer, President, London, England; R. B. Glover, Vice-President, London, England; R. L. Taylor, Secretary, London, England; P. Schofield, Accountant, Princeton, B.C.; Francis Glover, General Manager, Princeton, B.C.

NEW SHAFT MINE.

Francis Glover, Manager; Allen Ford, Overman; Frank Lester and Robert Courley, Firebosses.

This is a shaft operation situated near the Kettle Valley Railway in the town of Princeton. Operations were commenced during the year 1924 on the No. 1 seam of this property, which was reached at a vertical depth of 93 feet from the surface, found to be pitching south at an angle of 12°. While the seam is of unusual thickness, operation was confined to the upper 7 feet of the seam, which produced a good clean fuel and was in demand for domestic purposes.

A shaft was provided at the north side of this mine, from which slopes were driven to the dip, an approximate distance of 450 feet, provided with the necessary crosscuts and levels driven a limited distance on each side of the slopes.

The shaft was sunk a short distance to the north of the Similkameen river and as a result passed through a good thickness of river-silt, and notwithstanding the fact that the shaft was entirely cased with reinforced concrete, the measures above were impregnated with water, which greatly retarded the work. The maximum infiltration was found to be constantly at the working-faces that were advancing to the dip, the roadways behind gradually becoming dry as the faces advanced; the water problem was a costly matter to deal with, while the area of the mine and the general operations were small. The pumps were required to be in continuous operation and as a result of general adverse conditions these operations were suspended February, 1926, and the mine allowed to fill with water.

The following are the official returns from the Princeton Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	525			
Sold for export to United States				
Sold for export to other countries				
Total sales		525		
Used in making coke				
Used under colliery boilers, etc.	380			
Total for colliery use		380		
		905		
Stocks on hand first of year	92			
Stocks on hand last of year				
Difference taken from stock during year		92		
Output of colliery for year		813		

Company in receivership, April 30th. No men employed since.

Tulameen Valley Coal Co.

Chas. A. Hunter, General Manager; Alexander Bryden, Overman.

This mine is situated 2 miles west of the town of Princeton and is accessible by a wagon-road following the north bank of the Tulameen river, and has been developed by four well-maintained levels driven into the side of the hill, following the strike of the same from the surface outcrop, which is found to have an average pitch east of 12°.

The operations are being conducted on the pillar-and-stall system; the No. 1 or Lower level has been extended a distance of 800 feet from the portal; the No. 2 level a distance of 800 feet; while the upper two levels are some distance behind. All work being conducted to the raise, with stalls heading towards the surface croppings above, results in very little power being required at this mine. The seam has an average thickness of 24 feet, resembles and has the same characteristics as the No. 1 seam of the Princeton-B.C. Colliery, the lower portion being intersected with bands of clay, and as a result operations are confined to the upper portion of the seam, which consists of about 8 feet of good clean coal which is in demand for domestic purposes.

The mine is well timbered throughout with heavy framed sets. Preparation is being made for the installation of a new mine ventilating-fan, which has been delivered and is at present at the mine. This is expected to be in operation during the early part of 1927. Ventilation is at present produced naturally and, as is to be expected, is greatly affected by the surface temperature; when last visited ventilation measured showed 3,000 cubic feet of air a minute passing into this mine for the use of nineteen men, the stoppings and brattice being in good order. The working-places were well timbered, a sufficient supply of suitable timber was provided for the use of the workmen, and the roads were in good condition and well timbered.

The coal is loaded into cars having a capacity of 1 ton and are run by gravity from the faces to the entrance of the tunnels, where they are dumped over a bar-screen situated at the entrance to the No. 3 level, which is provided with a small bunker, where the coal is cleaned, sized, and loaded into motor-trucks and transported a distance of about half a mile to an elevated platform, provided with three loading-chutes, situated on a spur off the Kettle Valley Railway, where the coal is loaded into box cars.

Wheat electric head-lights are used by the workmen and flame safety-lamps of the Wolf type are used by the officials for inspection purposes. The coal is mined by hand and blasted when required by permitted explosives, and all shots are fired by certificated officials appointed for this purpose.

Mining conditions in this mine have been found to be most favourable, as the seam is overlaid with a good roof, is very free from any faulting, and may be generally considered, until the present time, as a gravity proposition. The entrance to the mine being on the same elevation and very accessible to the Kettle Valley Railway, little resort has been required in the past in regard to the installation of machinery. However, with a view of producing a larger percentage of lump coal and commencing operations to the dip of the No. 1 level, the following machinery has been secured and is being installed: One locomotive-type boiler, feed-water heater, feed-pump, steam-engine, hoist, 12- by 14-inch single-stage compressor, and mining-machines.

Copies of the "Coal-mines Regulation Act" and special rules are well posted near the entrance to this mine.

The following are the official returns for the Tulameen Valley mine for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	11,709	.....	.....	.....
Sold for export to United States	240	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	11,950	.....	.....
Used in making coke	.....	.....	.....	.....
Lost in preparation	1,275	.....	.....	.....
Used under colliery boilers, etc	.....	.....	.....	.....
Total for colliery use	.....	1,275	.....	.....
Stocks on hand first of year	.....	.....	.....	.....
Stocks on hand last of year	.....	.....	.....	.....
Difference added to (or taken from) stock during year	.....	.....	.....	.....
Output of colliery for year	.....	13,225	.....	.....

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		$
Supervision and clerical assistance	1	6.66	3	5.33–6.90	4	6.20
Whites—						
Miners	10	6.00	.....	.....	10	6.00
Miners' helpers	2	4.50	.....	.....	2	4.50
Labourers	.....	.....	5	4.00	5	4.00
Mechanics and skilled labour	.....	.....	1	5.50	1	5.50
Boys	.....	.....	.....	.....	.....	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	13	.....	9	.....	22	.....

Southern Okanagan Collieries, Ltd.

G. R. Hookham, President, Vancouver, B.C.; C. J. Rippin, Vice-President, Summerland, B.C.; R. M. Grant, Secretary, Vancouver, B.C.; B. R. Barlow, Superintendent, Penticton, B.C.

This company has been conducting operations which may be considered of a prospective nature at the White Lake coal-basin, situated 16 miles south of the town of Penticton and 6 miles west of the Okanagan Falls. This is accessible by a good wagon-road passing through the centre of the basin between Penticton and Keremeos.

Development-work has been limited and of an intermittent nature, but a more aggressive policy is planned for the future. During the early part of 1926 a number of men were employed digging trial pits, sapping and trenching on the north side of the field for the purpose of following up the croppings of the No. 3 seam, which is the most important exposed at the present time. At the north-west side of the basin an adit-level was driven, with the necessary crosscuts to the surface, a distance of about 400 feet along the strike of the No. 3 seam, where the seam is found to have a pitch of about 60° towards the centre of the basin. A fair amount of open-work and also a little tunnelling was done on the No. 2 seam, which is situated about 200 feet behind the opening to the No. 3 seam. A small trestle and bunkers were erected and roads graded to these openings, from which the coal was loaded into trucks for shipment.

About 1 mile south of the above openings work of a permanent character has been conducted during 1926, where it is intended the chief operations for this portion of the basin will be carried on. An 8- by 10-foot well-timbered level was driven a short distance into the side of the hill for the purpose of intersecting the No. 3 seam and will be used as the main haulage, while a coal-washing equipment, engines, boilers, and other machinery necessary for the operation were shipped to the property and partly installed when work was again suspended during September.

The following are the official returns from the Southern Okanagan Collieries, Limited, for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	426	.....	.....	.....
Sold for export to United States	.....	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	426	.....	.....
Used in making coke	.....	.....	.....	.....
Used under colliery boilers, etc.	.....	.....	.....	.....
Total for colliery use	.....	.....	.....	.....
Stocks on hand first of year	.....	.....	.....	.....
Stocks on hand last of year	.....	.....	.....	.....
Difference added to (or taken from) stock during year	.....	.....	.....	.....
Output of colliery for year	.....	426	.....	.....

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		$
Supervision and clerical assistance	1	7.25	2	7.87	3	15.12
Whites—						
Miners	5	5.20	.....	.....	5	.....
Miners' helpers	1	4.20	.....	.....	1	.....
Labourers	.....	.....	2	3.70	2	.....
Mechanics and skilled labour	.....	.....	2	5.20	2	.....
Boys	.....	.....	.....	.....	.....	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	7	.....	6	.....	13	.....

EAST KOOTENAY INSPECTION DISTRICT.

REPORT BY ROBERT STRACHAN, SENIOR INSPECTOR.

I beg to submit the annual report covering the inspection of coal-mines in the East Kootenay District during 1926.

This district is under the direct charge of John MacDonald, with office in Fernie, and his report covering the general conditions in and around the mines, with a detailed description of the same, is attached.

The collieries in operation during 1926 were the same as in the past few years—namely, Coal Creek and Michel, operated by the Crow's Nest Pass Coal Company, Fernie, and the Corbin Colliery, operated by the Corbin Coals, Limited, Spokane, Wash., U.S.A.

At Coal Creek four mines—No. 1 East, No. 1 South, Nos. 2 and 3—were worked steadily all year. In the latter part of December No. 9 was added to the list.

Michel Nos. 3 and 8 operations were fairly steady all year; no coal was produced from No. 3 East, but repair-work was maintained.

At Corbin the No. 6 mine was abandoned temporarily; No. 4 worked all year; and the Big Showing, open-cut or No 3 mine, situated about a mile south of the No. 4 mine, was opened and shipped a considerable amount, the greater part of which was banked, available for washing and cleaning during the winter.

The No. 3 mine, or Big Showing, was closed down in November owing to weather conditions.

There was no interruption of work during 1926 with labour trouble, but considerable loss of time was due to lack of demand for coal. Coal Creek worked only 68 per cent. of the available working-days; Michel, 82 per cent.; and Corbin, 81 per cent.

Eight accidents, involving death or injuries to nine workmen, were reported to this office as provided for by section 71 of the "Coal-mines Regulation Act." All of these accidents came under subsection (*b*) of the Act and no accidents were reported under subsection (*a*), explosions of gas, powder, or steam-boilers.

In two cases the accidents resulted in death, the other seven cases causing serious injuries. Three of the accidents, involving four of the men killed or injured, occurred at Coal Creek Colliery, four at Michel Colliery, and one at Corbin Colliery. Six of these accidents, involving seven workmen, occurred underground, and two, involving two men, above ground. According to occupation, the accidents affected the following: Miners, 4; drivers, 2; rope-riders, 2; and haulage-man, 1.

The following table shows the colliery where the accidents occurred and the cause, so far as could be determined:—

Colliery.	Haulage.	Falls of Coal.	Total.
Coal Creek	1	3	4
Michel	2	2	4
Corbin	1	----	1
Totals	4	5	9

Dealing with the causes of the accidents, the fatal accident at Coal Creek was due to a trip entering the wrong room at a high speed, knocking out some timber and allowing the roof to cave, which buried the rope-rider. The rope-rider was supposed to go down the slope first and see that the switches were right, but he apparently failed to do so.

One of the accidents at this colliery, involving two men, was due to a fall of coal from the side of the place they were building a cog in. Greater attention to the sides and the placing of a support might have prevented this accident.

The other case was of a driver trying to rerail a car with his horse; the car partially ran over him, causing serious injuries. Drivers had instructions not to do this.

At Michel one fatal accident was due to a fall of side-coal while repairing an airway; the deceased had instructions and the special rules required him not to take out timbers without

using a timber-pulling device. Despite the instructions of the assistant managers, who had visited the place a short time previous, he attempted to knock out a post with a hammer, when the whole side came away, burying him. In this case the timber-pulling device (Sylvester) was quite convenient, and kept there, as the other shift used it regularly for this purpose.

The other case at Michel of falls of coal was due to a fall of roof-coal and shale while placing lagging ahead, and probably could not be avoided.

A haulage accident at Michel was due to the driver getting entangled with his horse, and another was due to getting entangled in a moving chain-haul. In the latter case the man ought to have stopped the chain-haul before cleaning the track, and this accident could have been avoided.

The only accident at Corbin was the case of a teamster, whose team ran away in the yard, and in attempting to catch them he got entangled and tripped over a loose box and the horses trampled on him.

It is worth noting that no fatal accidents and few serious have been reported at Corbin for six years, which denotes a very high state of discipline and efficiency.

From the foregoing it is very evident that the greater number of these accidents could be avoided if the workmen would exercise just a little more care and comply with the rules and regulations.

The general condition of the mines with respect to ventilation is dealt with in detail in the report attached by John MacDonald, Inspector for the district, and shows the conditions to be fair.

In the No. 1 East mine at Coal Creek the average percentage of methane is fairly high, notwithstanding every effort to reduce it. This condition is due to some extent to the great number of blow-outs, many of which are so small as to be deemed not worth reporting. These accompany the mining of the coal, and frequently when the top coal is broken down by the miner, or due to the weight of the strata, considerable quantities of methane is given off.

As in former years, full advantage was taken of the facilities afforded by the Dominion Department of Minues to have analyses made of samples of mine air, which service is appreciated for the analyses made, sample-bottles furnished, and mailing facilities. For the district 123 samples were taken, of which twenty-six were lost by accident either in the laboratory or in transit. Of the samples taken, ninety-one were taken in the Coal Creek Colliery, twenty-eight in Michel, and two in Corbin. In taking the samples the conditions of the mine determine to a great extent the number of samples taken, and this especially in regard to the methane given off.

The condition with respect to the presence of coal-dust has been kept very well in hand during 1926, and it is very important that this work should be maintained and improved on. The principal means for dealing with this danger is by using non-combustible dust and water. Tests have been made regularly during the year and conditions have been kept very good.

Better attention could be given to the mine-cars to prevent the spilling of coal or coal-dust on the roadways; many of the cars built of timber afford too many means whereby the fine coal is spilled on the roadways; in other cases the cars are loaded with coal too high and frequently some coal is drawn off when going through canvas doors. All this coal is ground into very fine dust by the wheels, and much of it could be prevented if adequate precautions were taken in this respect.

During the year, as provided for by section 71, subsections (*c*) to (*h*), of the regulations, notices of dangerous occurrences to the extent of nine were reported. These include five blow-outs of methane and dust, all in No. 1 East mine, Coal Creek, and one bump in the same mine; the breakage of a flange on the main air-line at the power-house and the fall of a trestle in the mine-yard, both at Coal Creek Colliery. At Michel an ignition of gas was reported in the No. 3 mine, which was considered to be due to a blown-out shot.

Advantage was taken by the workmen at all the collieries of Rule 37, section 101, of the regulations to inspect the mine, and appreciation is expressed to them for doing this. This inspection is of great service to the Inspectors and the officials as well as the workmen in maintaining safer conditions in and around the collieries. At Coal Creek fifty-nine inspections were made for the four mines; Michel, twenty-four inspections for two mines; and Corbin, seven inspections for two mines.

Searches of the workmen for articles contrary to the provisions of the regulations were made regularly during the year, and no prosecutions were required on this account. Under the special rules seven prosecutions were made—six at Michel for breach of Special Rule 114, failure to sprag the undermined coal—and a conviction was made in each case. At Coal Creek one man was prosecuted for a breach of Special Rule 110, fighting in the mine, and a conviction made.

Haulage inside the mine is either by compressed-air-driven hoists or locomotives, self-acting inclines or horses. In some cases the hoist is situated outside the mine and driven by steam or compressed air.

All the workmen underground use the Edison electric mine safety-lamp of the cap type, while the officials use both the electric and Wolf safety-lamp, the latter as a means of making a rapid determination of the mine air with respect to the presence of methane.

The Burrell gas-detector is in use at all the mines for determining lower percentages of methane in the mine air than can be detected with the Wolf safety-lamp, as required by section 101, Rule 4, of the regulations.

In regard to the use of explosives, at Coal Creek no explosives are used for the production of coal, and while these are permitted at Michel and Corbin, every precaution is taken to avoid accidents.

The amount of rescue apparatus at the rescue-station maintained by the Department here is similar to 1925. The interest in this work has been fairly well maintained at Coal Creek and Michel, but at Corbin has fallen off to some extent.

Classes in first aid to the injured were held during 1926 at Coal Creek and Michel and none at Corbin.

The report by John Puckey, Instructor at the rescue-station here, covers this work in detail and needs no mention here.

It is again desired to thank the workmen and officials for their co-operation and assistance during 1926 in carrying out the work of inspection and hope for a continuation of the same.

Attached is the report covering the inspections in detail by John MacDonald, Inspector, and the annual returns as required by section 66 of the "Coal-mines Regulation Act" from the collieries for 1926.

Report by John MacDonald, Inspector.

Crow's Nest Pass Coal Co., Ltd.

Head Office—Fernie, B.C.

W. R. Wilson, President, Fernie, B.C.; A. H. McNeill, Vice-President, Vancouver, B.C.; J. S. Irvine, Secretary, Fernie, B.C.; A. Klauer, Treasurer, Fernie, B.C.; H. P. Wilson, General Manager, Fernie, B.C.

The above company operated during 1926 the Coal Creek and Michel Collieries on the western slope of the Rocky mountains in the East Kootenay Inspection District.

Coal Creek Colliery is situated at Coal Creek, about 5 miles from the town of Fernie. Railway connection from the colliery is made with the Canadian Pacific Railway and the Great Northern Railway at Fernie by the Morrissey, Fernie & Michel Railway.

Michel Colliery is situated on both sides of Michel creek, on the Crowsnest branch of the Canadian Pacific Railway, about 24 miles in a north-easterly direction from Fernie.

The following are the aggregate returns from the Crow's Nest Pass Coal Company's mines for the year 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	371,280	.....	65,841	.....
Sold for export to United States	175,258	.....	26,296	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	546,538	.....	92,137
Used in making coke	142,838	.....	.....	.....
Used under colliery boilers, etc	45,511	.....	.....	.....
Total for colliery use	.....	188,349	.....	.....
		734,887		
Stocks on hand first of year	5,781	.....	506	.....
Stocks on hand last of year	745	.....	1,817	.....
Difference taken from stock during year	.....	5,036	.....	1,311
Output of colliery for year	.....	729,851	.....	93,448

Number of Hands employed, Daily Wages paid, etc.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	40	.....	21	.....	61	.....
Whites—						
Miners	454	.....	.....	.....	454	.....
Miners' helpers	.....	.....	.....	.....	.....	.....
Labourers	80	.....	170	.....	250	.....
Mechanics and skilled labour	303	.....	189	.....	492	.....
Boys	25	.....	14	.....	39	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	902	.....	394	.....	1,296	.....

COAL CREEK COLLIERY.

B. Caufield, Manager; J. Taylor, Assistant Manager; E. Morrison, Safety Inspector.

This colliery is situated on both sides of Coal creek and has railway connection with the Canadian Pacific and Great Northern Railways at Fernie by means of a branch line, 5 miles in length, called the Morrissey, Fernie & Michel Railway. The mines producing coal during 1926 were No. 1 East, No. 3, No. 2, and No. 1 South on the south side of the valley, the only one operated on the north side being No. 9; the principal work done in the latter consisted of repairs to the main roads and return airway, the face of the present workings being reached in the latter part of December, 1926.

A general description of the method of working, systems of haulage in and around the mines, and surface plant has appeared in previous Annual Reports of the Minister of Mines; the only addition to the plant has been the installation of an automatic self-starter on No. 1 East fan and the erection of a new distribution-station on the south side of the valley to take care of Nos. 2, 3, and 1 East fans.

The lamp used exclusively by the workmen is the Edison electric cap safety-lamp, while Wolf safety-lamps are used by the officials and bratticemen for testing purposes, all lamps being cleaned and repaired in a well-equipped lamp-room located in a central position at the colliery.

Coal Creek Colliery, B.C.

Michel Colliery, B.C.

Burrell gas-detectors are provided at all the mines for the purpose of detecting lower percentages of methane than that usually found by the ordinary safety-lamp.

A number of houses are provided at Coal Creek for the convenience of those who prefer living close to the mines, while a good train service is maintained with the town of Fernie, where the majority of the workmen reside.

Copies of the "Coal-mines Regulation Act" and special rules are posted up at all the mines. Following is a brief description of the conditions prevailing in the various mines during 1926:—

No. 1 East Mine.

J. Caufield, Overman; J. Duncan, J. Maltman, T. Reid, R. Fowler, and E. Rutledge, Firebosses.

This mine is operating the eastern portion of the No. 1 seam and is ventilated by an electrically driven 11- by 10-foot Sirocco fan, which, running at a speed of 174 r.p.m., produced an average quantity of 147,000 cubic feet of air a minute, under a water-gauge of 3.6 inches. It is divided into four splits, the quantities passing in each at the last inspection measuring as follows:—

No. 1 Split.—30,800 cubic feet of air a minute for the use of forty men and seven horses. Burrell gas-detector, 1.1 per cent. methane.

No. 2 Split.—15,600 cubic feet of air a minute for the use of twenty-five men and three horses. Burrell gas-detector, 1.1 per cent. methane.

No. 3 Split.—28,050 cubic feet of air a minute for the use of twenty-one men and four horses. Safety-lamp indicated 1 per cent. methane.

No. 4 Split.—20,240 cubic feet of air a minute for the use of twenty-seven men and four horses. Burrell gas-detector, 0.8 per cent. methane.

North Return.—103,500 cubic feet of air a minute for the use of eighty men and fifteen horses. Safety-lamp indicated 0.6 per cent. methane.

West side of fan-shaft, 112,450 cubic feet of air a minute; east side of fan-shaft, 41,000 cubic feet of air a minute; total return air, 153,450 cubic feet of air a minute.

Explosive gas has been found on several occasions in the course of inspection, generally in cavities in the roof above the timbers, while Burrell readings taken in the return air-currents have varied from 0.5 per cent. methane in the No. 2 split to 2.90 per cent. methane in the No. 3 split. The latter reading was taken the day following a blow-out, the whole of the district being fenced off at the time.

Roadways and timbering have been kept in a fairly good state of repair, a good supply of timber provided for the use of the workmen, and the requirements of the "special timbering" rules fairly well attended to at the working-faces.

Spraying systems are operated on all roads and working-faces where required, while the main roads are treated with inert dust. Two hundred and twenty-eight samples of dust have been taken in this mine in compliance with Regulation No. 4 of the Coal-dust Regulations, the resultant analysis proving that 178 of these were in keeping with the requirements of the above regulation.

No. 1 South Mine.

F. Landers, Overman; W. Hynds, W. Stockwell, M. Hilton, and J. Whyte, Firebosses.

This mine operates the upper and western portion of the No. 1 seam and is ventilated by an electrically driven 8- by 4-foot Keith fan, which, running at a speed of 254 r.p.m., produced an average quantity of 46,660 cubic feet of air a minute, under a water-gauge of 2.5 inches. The ventilation is divided into two splits, the quantities passing in each at the last inspection measuring as follows:—

No. 1 Split.—29,750 cubic feet of air a minute for the use of twelve men and two horses. Burrell gas-detector, 1 per cent. methane.

No. 2 Split.—9,500 cubic feet of air a minute for the use of twelve men and two horses. Burrell gas-detector, 0.6 per cent. methane.

Main Return.—53,400 cubic feet of air a minute for the use of twenty-four men and four horses. Safety-lamp indicated 0.6 per cent. methane.

Explosive gas has been found three times in the course of inspection, while Burrell readings taken in the return air-currents have varied from 0.3 per cent. methane in the No. 2 split to 1.5 per cent. in the No. 1 split.

Roadways and timbering have been kept in fairly good shape, a good supply of timber provided for the use of the workmen, and the requirements of the "special timbering" rules fairly well attended to at the working-faces.

Spraying systems are operated on all roads and working-places where required, while the main roads are treated with inert dust.

Two hundred and twenty-five samples of dust were taken in this mine in conformity with Regulation No. 4 of the Coal-dust Regulations, 167 of these being in keeping with the requirements of the above regulation.

No. 2 Mine.

C. McNay, Overman; J. Bushell, W. Clarkstone, R. Alstead, and J. Smith, Firebosses.

This mine is situated on the same level as the tipple and operates the upper and western portion of the No. 2 seam. It is ventilated by a 16- by 8-foot Wilson fan, which, running at a speed of 136 r.p.m., produced an average quantity of 37,570 cubic feet of air a minute, under a water-gauge of 3.4 inches. The ventilation in this mine is all on one split at present, the quantity passing at the last inspection measuring as follows:—

Main Return.—42,000 cubic feet of air a minute for the use of fifty-four men and ten horses. Safety-lamp indicated a very slight trace of methane travelling in the air.

Explosive gas has been found eight times in the course of inspection, while the percentage of methane in the return air-currents, as determined by the Burrell gas-detector, varied from 0.6 per cent. in the No. 4 Incline district to 1.2 per cent. in the Diagonal district.

Roadways and timbering have been kept in a fairly good state of repair, a good supply of timber provided for the use of the workmen, and the requirements of the "special timbering" rules fairly well attended to at the working-faces.

Spraying systems are in use on all roads and working-places where required, while all main roads are treated with inert dust.

Two hundred and fifty-six samples of dust were taken in this mine in accordance with Regulation No. 4 of the Coal-dust Regulations, 216 of these being in keeping with the standard set by the above regulation.

No. 3 Mine.

J. Biggs, Overman; R. S. Phillips, W. Brown, E. Caufield, and J. Chester, Firebosses.

This mine operates the lower and eastern portion of the No. 2 seam and is ventilated by a 16- by 8-foot Wilson fan, which, running at a speed of 160 r.p.m., produced an average quantity of 62,160 cubic feet of air a minute, under a water-gauge of 4.5 inches. Ventilation is divided into two splits, the quantities passing in each at the last inspection measuring as follows:—

No. 1 Split.—10,800 cubic feet of air a minute for the use of ten men and four horses. Burrell gas-detector, 0.45 per cent. methane.

No. 2 Split.—33,120 cubic feet of air a minute for the use of forty-five men and seven horses. Burrell gas-detector out of order; safety-lamp indicated 1.6 per cent. methane.

Main Return.—66,000 cubic feet of air a minute for the use of fifty-five men and eleven horses. Safety-lamp, 1 per cent. methane.

Explosive gas has been found six times in the course of inspection, while the percentage of methane in the return air-currents, as determined by the Burrell gas-detector, varied from 0.2 per cent. in the No. 1 split to 1.9 per cent. in the No. 2 split.

Roadways and timbering have been kept in fairly good shape, a good supply of timber provided for the use of the workmen, and the requirements of the "special timbering" rules fairly well attended to at the working-faces.

Spraying systems are in use on all roads and working-faces where required, while the main roads are treated with inert dust.

Two hundred and forty-one samples of dust were taken in this mine in accordance with Regulation No. 4 of the Coal-dust Regulations, 173 of these being in keeping with the requirements of the above regulation.

No. 9 Mine.

J. Worthington, Overman.

The principal work done in this mine during the year consisted of repairs to the main haulage-roads and main return airway, this being completed and development-work resumed

in Nos. 3 and 4 inclines in the latter part of December. It is ventilated by a fan of the Guibal type, the quantity of air passing at the last inspection measuring as follows:—

Main Intake.—14,000 cubic feet of air a minute for the use of five men and two horses.

Roadways and timbering have been kept in good shape and generally free from coal-dust at all our inspections.

No explosive gas has been found in the course of inspection and the methane content in the return air-current has always been under 0.5 per cent.

Following are the official returns from Coal Creek Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	112,948	.....	27,910	.....
Sold for export to United States	174,684	.....	6,833	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	287,632	.....	34,743
Used in making coke	53,732	.....	.....	.....
Used under colliery boilers, etc.	29,436	.....	.....	.....
Total for colliery use	.....	83,168	.....	.....
		370,800		
Stocks on hand first of year	5,491	.....	89	.....
Stocks on hand last of year	745	.....	357	.....
Difference taken from stock during year	.....	4,746	.....	268
Output of colliery for year	.....	366,054	.....	35,011

Number of Hands employed, Daily Wages paid, etc. (Includes Fernie Coke-ovens.)

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	24	.....	12	.....	36	.....
Whites—						
Miners	255	.....	.....	.....	255	.....
Miners' helpers	.....	.....	.....	.....	.....	.....
Labourers	47	.....	68	.....	115	.....
Mechanics and skilled labour	159	.....	106	.....	265	.....
Boys	9	.....	2	.....	11	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	494	.....	188	.....	682	.....

MICHEL COLLIERY.

R. Bonar, Manager; M. McLean, Afternoon-shift Overman; J. Henney, Safety Inspector.

This colliery is situated on Michel creek, 24 miles north-east of Fernie, and has railway connection with the Canadian Pacific Railway. A general description of the methods of work, system of haulage in and around the mines, and surface plant has appeared in previous Annual Reports of the Minister of Mines.

A number of new machines, lathes, etc., have been added to the equipment in the machine-shop. Largely through the efforts of the Coal Company and the Local Centre of the St. John Ambulance Association, a very fine Studebaker ambulance was provided during 1926, thus

supplying a long-felt want at this colliery, especially when one considers the distance that injured men have to be transported to the hospital.

As in the previous three years, the whole of the output at this colliery has come from Nos. 3 and 8 mines, operations in No. 3 East being confined chiefly to repairs on main roads and attending to the pumps.

The Edison electric cap safety-lamp is used exclusively by the workmen, while Wolf safety-lamps are used by the officials and bratticemen for testing purposes, all lamps being cleaned and repaired in a well-equipped lamp-room located in a central position at the colliery. Burrell gas-detectors are provided at all the mines for the purpose of detecting lower percentages of methane than that usually found by the ordinary safety-lamp.

Copies of the "Coal-mines Regulation Act" and special rules are posted up at all the mines. Following is a brief description of the conditions prevailing in the various mines throughout 1926:—

No. 3 Mine.

M. Littler, Overman; J. Strachan, T. Owen, A. Ball, R. Beard, and O. Winstanley, Firebosses; W. H. Cartwright and F. Yates, Shotfirers.

This mine operates the Nos. 1, 2, and 3 seams and is ventilated by a 12- by 6-foot Sullivan fan, which, running at a speed of 148 r.p.m., produced an average quantity of 103,900 cubic feet of air a minute, under a water-gauge of 2.6 inches. The ventilation is divided into five splits, the quantities passing in each at the last inspection measuring as follows:—

No. 1 Split.—Operations were suspended in this split in September and since then only sufficient air has been allowed to circulate to keep the workings clear of gas.

No. 2 Split.—21,120 cubic feet of air a minute for the use of thirty men and five horses. Burrell gas-detector, 0.4 per cent. methane.

No. 3 Split.—16,900 cubic feet of air a minute for the use of fifteen men and one horse. Burrell gas-detector, 0.5 per cent. methane.

No. 4 Split.—23,100 cubic feet of air a minute for the use of twenty-four men and three horses. Burrell gas-detector, 0.45 per cent. methane.

No. 5 Split.—32,800 cubic feet of air a minute for the use of twenty-eight men and four horses. Safety-lamp, 0.7 per cent. methane.

Main Return.—112,000 cubic feet of air a minute for the use of ninety-seven men and thirteen horses. Safety-lamp, 0.6 per cent. methane.

Explosive gas has been found four times in the course of inspection, while the percentage of methane in the return air-currents, as determined by the Burrell gas-detector, varied from 0.2 per cent. in the No. 1 split to 1.7 per cent. in the No. 3 split.

Roadways and timbering have been kept in good shape, a good supply of timber provided for the use of the workmen, and, with the exception of three working-places, the requirements of the "special timbering" rules fairly well attended to at the faces. In the places mentioned above the miners were prosecuted for failing to set sufficient sprags to overhanging coal.

Spraying systems are in use on all roads and working-places where required, while the main roads are treated with inert dust.

One hundred and fifty-seven samples of dust were taken in this mine in conformity with Regulation No. 4 of the Coal-dust Regulations, 129 of which met the requirements of the above regulations.

No. 8 Mine.

C. Stubbs, Overman; E. Ainsworth, A. Almond, R. McFegan, R. Taylor, and J. Wallbank, Firebosses; W. McKay, J. Scales, and A. Davis, Shotfirers.

This mine operates the upper portion of the No. 8 seam and is ventilated by an 8- by 3½-foot double-inlet Jeffrey fan, which, running at a speed of 240 r.p.m., produced an average quantity of 71,600 cubic feet of air a minute, under a water-gauge of 3 inches. Ventilation is divided into two splits, the quantities passing in each at the last inspection measuring as follows:—

No. 1 Split.—18,750 cubic feet of air a minute for the use of fifty-two men and twelve horses.

No. 2 Split.—22,940 cubic feet of air a minute for the use of sixty-two men and fourteen horses.

Main Return.—73,600 cubic feet of air a minute for the use of one hundred and fourteen men and twenty-six horses.

No explosive gas was found on any of our inspections and the methane content in the return air-currents has always been well under 0.5 per cent.

Roadways and timbering have been kept in good shape, a good supply of timber provided for the use of the workmen, and the requirements of the "special timbering" rules well attended to at the working-faces.

Spraying systems are in use on all roads and working-places where necessary and all haulage-roads treated regularly with inert dust.

One hundred and twenty-four samples of dust were taken in this mine in accordance with Regulation No. 4 of the Coal-dust Regulations, eighty-nine of which contained 50 per cent. or over of incombustible matter.

No. 3 East Mine.

A. Frew, Fireboss.

Operations in this mine have been conducted along the same lines as in 1925, two repairmen and a fireboss being engaged in maintaining the main roadways and attending to the pumps. It is ventilated by a 16- by 8-foot Wilson fan, which, running at a speed of 90 r.p.m., produced an average quantity of 68,500 cubic feet of air a minute, under a water-gauge of 1.2 inches. This mine is divided into two splits, the quantities passing in each at the last inspection measuring as follows:—

No. 1 Split.—30,400 cubic feet of air a minute for the use of two men and one horse.

No. 2 Split.—25,000 cubic feet of air a minute.

Main Return.—69,300 cubic feet of air a minute for the use of three men and one horse.

Roadways and timbering have been kept in good shape and a good supply of timber provided to take care of the repair-work.

No explosive gas was found in this mine during the course of our inspections, while the percentage of methane in the return air-currents, as determined by the Burrell gas-detector, varied from 0.3 per cent. in the No. 1 split to 1.3 per cent. in the No. 2 split.

Although there are no spray-lines in use in this mine, frequent applications of inert dust have been given when required.

Following are the official returns from Michel Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	258,332		37,931	
Sold for export to United States	574		19,461	
Sold for export to other countries				
Total sales		258,906		57,392
Used in making coke	89,106			
Used under colliery boilers, etc.	16,073			
Total for colliery use		105,179		
		364,085		
Stocks on hand first of year	290		417	
Stocks on hand last of year			1,460	
Difference taken from stock during year		290		1,043
Output of colliery for year		363,795		58,435

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC. (INCLUDES COKE-OVENS.)

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
Supervision and clerical assistance	16	.....	9	.....	25	.....
Whites—						
Miners	199	.....	.....	.....	199	.....
Miners' helpers	.....	.....	.....	.....	.....	.....
Labourers	33	.....	102	.....	135	.....
Mechanics and skilled labour	144	.....	83	.....	227	.....
Boys	16	.....	12	.....	28	.....
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	408	.....	206	.....	614	.....

Corbin Coals, Ltd.

Head Office—Spokane, Wash.

Austin Corbin, President, Spokane, Wash.; E. J. Roberts, Vice-President, Spokane, Wash.; Geo. W. Evans, Vice-President, Spokane, Wash.; A. M. Allen, Secretary-Treasurer, Spokane, Wash.; E. L. Warburton, Superintendent, Corbin, B.C.

This colliery is situated 14 miles from McGillivray Junction on the Crowsnest branch of the Canadian Pacific Railway, to which it is connected by a branch line called the Eastern British Columbia Railway. It consists of four mines, Nos. 3, 4, 5, and 6, the latter being operated during the first six months of 1926 only; No. 3 from July to November, inclusive; no work of any description was done in No. 5, while No. 4 operated practically throughout 1926.

A general description of the method of working, system of haulage in and around the mines, and surface plant has appeared in previous Annual Reports of the Minister of Mines. Important additions to the surface plant during the present year are as follows: A new Climax locomotive was purchased to facilitate switching around the surface and for transportation purposes between the Roberts mine and the tipple. A 250-horse-power Babcock & Wilcox water-tube boiler was erected at the boiler plant, while one McEwan engine and one 200-k.v.a. generator was installed at the power-house.

At the tipple, electricity has replaced steam as the motive power, while two double-deck arm screens have been installed, together with the necessary elevators, conveyors, chutes, and one 210-ton storage-bin.

Further additions now under construction are one Ruggles-Cole dryer, Parrish screens, coal-crusher, Wilmot jigs, with all necessary chutes, bins, etc.

The lamp generally used by the workmen is the Edison electric cap safety-lamp, while Wolf safety-lamps are used by the officials and bratticemen for testing purposes, all lamps being cleaned and repaired in a fairly well-equipped lamp-room located in a central position at the colliery.

Copies of the "Coal-mines Regulation Act" and special rules are posted up at all the mines. Following is a brief description of the conditions prevailing in the various mines throughout 1926:—

No. 4. MINE.

W. Almond, Overman; W. Chapman, G. Elmes, and H. Ferryman, Firebosses.

This mine is operating the No. 4 seam, the system of working being the caving system on the retreat. It is ventilated by a single-inlet fan of the Guibal type, which, running at a speed of 90 r.p.m., produced an average quantity of 21,600 cubic feet of air a minute, under a water-

gauge of 0.5 inch. The ventilation is all on one split, the quantity passing at the last inspection measuring as follows:—

Main Intake.—24,500 cubic feet of air a minute for the use of twenty-three men and three horses.

No explosive gas has been found during the course of our inspections, while the percentage of methane in the return air-current has always been well under 0.5 per cent.

Roadways and timbering have been kept in good shape, a good supply of timber provided for the use of the workmen, and the requirements of the "special timbering" rules fairly well attended to at the working-faces. This mine, being naturally damp, has been generally free from coal-dust at all our inspections.

No. 3 or Roberts Mine.

J. Virgo, Fireboss.

This mine is operated on the open-cut principle and resumed operations in July, 1926, after having been closed down for some years. As weather conditions interfere greatly with operations in winter, coal production was suspended in the latter part of November, to be resumed again in the spring.

Conditions have been fairly good at this mine, all shots being prepared and fired under the direct supervision of a certificated official.

No. 6 Mine.

W. Almond, Overman; W. Chapman, G. Elmes, and H. Ferryman, Firebosses.

This mine operated only during the first six months of 1926, all work being suspended in the beginning of July. While in operation it was ventilated by a 36- by 54-inch Sirroco fan, which, running at a speed of 284 r.p.m., produced an average quantity of 31,700 cubic feet of air a minute, under a water-gauge of 0.6 inch.

Explosive gas was found on one occasion in the course of inspection, while the percentage of methane in the return air-currents has always been under 0.5 per cent.

Roadways and timbering have been kept in good shape, a good supply of timber provided for the use of the workmen, and the requirements of the "special timbering" rules well attended to at the working-faces.

This mine is naturally damp and has been generally free from coal-dust at all our inspections.

Following are the official returns from Corbin Colliery for the year ended December 31st, 1926:—

Sales and Output for Year.	Coal.		Coke.	
(Tons of 2,240 lb.)	Tons.	Tons.	Tons.	Tons.
Sold for consumption in Canada	47,444	.....	.....	.....
Sold for export to United States	21,975	.....	.....	.....
Sold for export to other countries	.....	.....	.....	.....
Total sales	.....	69,419	.....	.....
Used in making coke	.....	.....	.....	.....
Used under colliery boilers, etc	6,166	.....	.....	.....
Total for colliery use	.....	6,166	.....	.....
		75,585	.....	.....
Stocks on hand first of year	3,110	.....	.....	.....
Stocks on hand last of year	46,124	.....	.....	.....
Difference added to stock during year	.....	43,014	.....	.....
Output of colliery for year	.....	118,599	.....	.....

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, ETC.

Character of Labour.	Underground.		Above Ground.		Totals.	
	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.	No. employed.	Average Daily Wage.
		$		$		$
Supervision and clerical assistance	4	6.16	10	4.40	15	5.28
Whites—						
Miners	35	5.80	.....	.....	35	5.80
Miners' helpers	10	4.50	.....	.....	10	4.50
Labourers	5	4.50	28	4.20	33	4.35
Mechanics and skilled labour	6	5.00	35	5.30	41	5.15
Boys	.....	.....	2	3.36	2	3.36
Japanese	.....	.....	.....	.....	.....	.....
Chinese	.....	.....	.....	.....	.....	.....
Indians	.....	.....	.....	.....	.....	.....
Totals	60	.....	75	.....	136	.....

GOVERNMENT MINE-RESCUE STATIONS.

Mine-rescue stations are established under the authority of section 117, "Coal-mines Regulation Act," for the purpose of supplementing in case of need the colliery installations of mine-rescue apparatus, and also for the purpose of training holders of certificates of competency in the use of mine-rescue apparatus. In cases of emergency these stations are available for the use of any trained corps of mine-rescuers, duly qualified medical practitioners, or corps trained in the work of first aid to the injured, subject always to the order of an Inspector.

Numerous calls were received during 1926 for the use of the oxygen resuscitation apparatus from different hospitals; in the case of Nanaimo Station a call was answered at Parksville and another at Qualicum, at the request of medical men, to give oxygen treatment in extremities. Nanaimo Hospital forwarded a letter expressing their appreciation of service received in emergencies requiring oxygen treatment. Four stations are established, as follows:—

Nanaimo.—J. D. Stewart, Instructor; serves the coal-mines in the Nanaimo area of the Vancouver Island Inspection District.

Cumberland.—John Thomson, Instructor; serves the coal-mines in the Comox area of the Vancouver Island Inspection District.

Middlesboro.—W. C. Stone, Instructor; serves the coal-mines in the Nicola-Princeton Inspection District.

Fernie.—John T. Puckey, Instructor; serves the coal-mines in the East Kootenay Inspection District.

MINE-RESCUE STATION, NANAIMO.

REPORT BY J. D. STEWART, INSTRUCTOR.

I have the honour to submit herewith my annual report as Instructor of Government Mine-rescue Station, Nanaimo, for the year ended December 31st, 1926.

There was one emergency call received from the Reserve mine in the case of two miners who were covered by a fall of coal, one being killed and the other seriously injured; I immediately went to the mine with the pulmotor, but found that the more seriously injured man had died.

There were a number of emergency calls for oxygen from the local medical men and the hospital; also calls from Parksville and Qualicum Beach; all were immediately answered.

A number of trained and registered holders of certificates in mine-rescue training went through a course of retraining during the year and one new man completed the course.

This station is equipped with six sets of the Gibbs apparatus, six sets of the Burrell all-service gas-masks, and fifty self-rescue machines. An ample supply of oxygen, cardoxide, and spare parts for machines are on hand and the whole is ready for immediate service.

MINE-RESCUE STATION, CUMBERLAND.

Report by John Thomson, Instructor.

I have the honour to submit my annual report for the year ended December 31st, 1926, Mine-rescue Station, Cumberland.

During the year two teams of six men carried out a practice with the Paul apparatus every week; all being employees of the Canadian Collieries (Dunsmuir), Limited.

The apparatus kept in readiness at this station consists of six sets of the Paul apparatus, six sets of the Burrell all-service gas-masks, and fifty self-rescue machines. There is also one Draeger pulmotor, one type B pulmotor, and one H.H. inhalator. In addition to above there are four sets of the Paul apparatus, owned by the Canadian Collieries (Dunsmuir), Limited, kept at this station. There is kept at all times an adequate supply of oxygen and supplies.

The teams which trained at this station competed at the annual mine-rescue and first-aid competitions held at Ladysmith.

MINE-RESCUE STATION, MIDDLESBORO.

Report by William C. Stone, Instructor.

As caretaker and instructor of the Middlesboro Mine-rescue Station, I beg to submit the following report for the year 1926:—

There are five sets of the Paul apparatus and four sets of the Gibbs apparatus kept at this station, together with supplies of oxygen and cardoxide.

During the year a number of men who hold certificates in mine-rescue training went through a course of practice with the apparatus.

The rescue apparatus at Coalmont Collieries was examined and put in order during the year.

MINE-RESCUE STATION, FERNIE.

Report by John T. Puckey, Instructor.

I have the honour to submit the following report of the work done at the Fernie Mine-rescue Station during the year 1926:—

The annual first-aid classes were started in January and carried on through till March; sixty-one took the examination for first aid and ten for home-nursing. This is the largest class that has ever been put through in Fernie. One senior and one junior team continued practising up to May 22nd, when they were examined by Colonel Hodgetts in the Dominion and Provincial competitions. Both teams worked hard and each was awarded second place in their respective classes in the Dominion competition.

The rescue apparatus at this station consists of the Gibbs machines and the Burrell all-service gas-masks; these are kept in readiness at all times; in addition to above there is a stock of the new self-rescue machines which were recently approved by the Bureau of Mines, U.S.A.

The Michel Branch of the East Kootenay Mine Safety Association got two moving pictures from the Bureau of Mines, Washington. These were shown twice in Michel and twice in Fernie. The titles were "First Aid as Applied in the Mine" and "Rock Dusting in the New Orient Mine"; they were both interesting and instructive and showed what can be accomplished by using modern safety methods in and around the mines.

Twenty employees of Coal Creek Colliery and ten at Michel Colliery took retraining with the Biggs apparatus, also five new men from Michel took a full course in mine-rescue work and were granted their certificates in December. During the training 800 cubic feet of oxygen and 160 lb. of cardoxide were used.

Six tanks of oxygen were received from the Liquid Air Company, of Calgary, Alta., and there are on hand at present nineteen tanks of oxygen (1,900 cubic feet) and 336 lb. of cardoxide, also spare parts, gaskets, etc., for replacing on the apparatus.

It is a pleasure to report that no emergency calls were received from any of the collieries for the use of the apparatus. There was a call from one of the local medical men to administer oxygen to a patient at the hospital.

BOARD OF EXAMINERS FOR COAL-MINE OFFICIALS.

FIRST-, SECOND-, AND THIRD-CLASS CERTIFICATES AND MINE-SURVEYING CERTIFICATES.

Report by James Strang, Secretary to the Board.

I have the honour to submit herewith the annual report of the transactions of the above Board for the year ended December 31st, 1926.

The Board of Examiners, which was formed on July 1st, 1919, at present consists of James Dickson, Chief Inspector of Mines, as Chairman; Harry Ernest Miard, member; and James Strang, member and Secretary of the Board. The meetings of the Board are held in the office of the Mines Department, Victoria. The examinations are held in accordance with the rules made by the Provincial Board of Examiners and approved by the Minister of Mines, July 16th, 1919. As these rules were published in the report of 1922 there is no need to publish them again.

Two examinations were held in 1926; the first was held on May 26th, 27th, and 29th and the second on November 17th, 18th, and 19th.

The total number of candidates at these examinations was as follows: For First-class Certificates, 4 (2 passed and 2 failed); for Second-class Certificates, 5 (3 passed and 2 failed); for Third-class Certificates, 20 (14 passed and 6 failed); for Mine Surveyor Certificates, 5 (1 passed and 4 failed).

The following is a list of the candidates who successfully passed the examinations in the various classes:—

First-class Candidates.—John Bennett and E. H. Devlin.

Second-class Candidates.—Walter McKay, James McWhirter, and Robert Taylor.

Third-class Candidates.—Robert Barrass, Peter M. Hunter, Frank Bond, Robert Murray, James Littler, John G. Hindmarsh, Archibald McWhirter, Thomas Slee, John Stewart, Thomas McCourt, Fred Johnston, Horace Bate, William Cass, and Thomas Smith.

Mine Surveyor Candidate.—Robert Bonar.

A thorough knowledge of the elementary subjects on which the theory of mining is built is absolutely necessary to mining students and most of the candidates who failed to qualify in these examinations seemed to lack this fundamental knowledge.

The attention of mining students in British Columbia is directed to the course of mining provided by the Department of Education. To those who intend to qualify as mine officials this course of study would be of immense advantage.

Examinations for Certificates of Competency as Coal-miners.

In addition to the examinations and certificates already specified as coming under the Board of Examiners, the Act further provides that every coal-miner shall be the holder of a certificate of competency as such. By "miner" is meant a person employed underground in any coal-mine to cut, shear, break, or loosen coal from the solid, whether by hand or machinery.

The work of the Board of Examiners in examining candidates for coal-miners' certificates has been carried on in all mining districts at intervals of not less than sixty days, as required by the amendment of the Act.

No certificate has been granted in any case where the candidate failed to satisfy the Board as to his general fitness, experience in a coal-mine, and a working knowledge of the English language. During 1926 forty-six examinations have been held for candidates for certificates of competency as coal-miners in the various coal-mining districts of the Province.

One hundred and ninety-three candidates presented themselves for examination; 174 passed and nineteen failed to qualify. In addition to above, a number of duplicate certificates were issued to coal-miners who had lost their original certificate of competency.

The Board of Examiners desires to thank the different coal-mining companies for the use of their premises in holding these examinations.

The Inspector of Mines in each district has authority, under the amendment (1919) to "Coal-mines Regulation Act," to grant, after a satisfactory examination, a provisional certificate of competency as a coal-miner to applicants, which entitles the holder to follow the occupation of a coal-miner for a period not exceeding sixty days or until the date of the next regular examination before the Board.

REGISTERED LIST OF HOLDERS OF CERTIFICATES OF COMPETENCY AS COAL-MINE OFFICIALS.

FIRST-CLASS CERTIFICATES OF COMPETENCY ISSUED UNDER "COAL-MINES REGULATION ACT, 1897."

Name.	Date.	Name.	Date.
Shepherd, Francis H.	Mar. 5, 1881	Stockett, Thomas, Jr.	Aug. 3, 1901
Honobin, William	May 1, 1882	Cunliffe, John	Aug. 3, 1901
Little, Francis D.	May 1, 1882	Evans, Daniel	Aug. 3, 1901
Chandler, William	Dec. 21, 1883	Browitt, Benjamin	Aug. 3, 1901
Priest, Elijah	Dec. 21, 1883	McEvoy, James	Oct. 17, 1902
Randle, Joseph	Jan. 18, 1888	Wilson, A. R.	Oct. 17, 1902
Matthews, John	Jan. 8, 1889	Simister, Charles	Oct. 17, 1902
Norton, Richard Henry	Aug. 26, 1889	Budge, Thomas	Oct. 17, 1902
Kesley, John	Mar. 4, 1892	Richards, James A.	Oct. 17, 1902
Wall, William H.	May 30, 1896	McLean, Donald	Jan. 21, 1904
Wilson, David	May 30, 1896	Wright, H. B.	Jan. 21, 1904
Smith, Frank B.	May 30, 1896	Coulthard, R. W.	Jan. 21, 1904
Bradshaw, George B.	June 12, 1899	Roaf, J. Richardson	Jan. 21, 1904
Simpson, William G.	June 12, 1899	John, John	Jan. 21, 1904
Hargreaves, James	Feb. 5, 1901	Manley, H. L.	Jan. 21, 1904
Drinnan, Robert G.	Feb. 5, 1901		

FIRST-CLASS CERTIFICATES ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT," 1904–1911–1919.

Name.	Date.	Name.	Date.
Baxter, Andrew	June 10, 1911	Graham, Thomas	Nov. 9, 1907
Battey, Richard	May 27, 1913	Gray, James	Nov. 27, 1909
Bennett, John	Dec. 30, 1926	Henderson, Robert	Nov. 27, 1909
Biggs, J. G.	July 22, 1908	Hewlett, Howe	May 27, 1913
Bonar, Robert	Oct. 28, 1911	Higgins, Alexander	Dec. 19, 1918
Brace, Tom	May 13, 1915	Hodge, William K.	June 16, 1925
Bridge, Edward	July 22, 1908	Holden, James	May 1, 1909
Brown, David	May 21, 1914	Howden, Archibald	May 27, 1913
Brown, Robert Joyce	May 13, 1915	Howells, Nathaniel	Oct. 28, 1911
Caufield, Bernard	May 1, 1909	Hughes, John C.	May 17, 1917
Church, James A. H.	June 10, 1911	Humphries, Clifford	June 10, 1911
Cox, Richard	May 13, 1915	Hunter, Alex. B.	July 8, 1916
Crowder, James	June 10, 1911	Huntrods, Eustace S. F.	May 19, 1922
Cunningham, John Howard	May 9, 1912	Jackson, Thos. R.	Nov. 9, 1907
Davidson, W. A.	May 1, 1909	James, William	July 22, 1908
Davies, David	June 10, 1911	Jaynes, Frank	May 13, 1915
Davies, Stephen	Nov. 15, 1917	Jemson, Jas. W.	May 27, 1913
Davies, Thos. Owen	May 21, 1914	Kellock, George	June 10, 1911
de Hart, J. B.	May 17, 1917	Knox, T. K.	July 27, 1909
Derbyshire, James	Nov. 9, 1907	Laird, Robert	Nov. 15, 1917
Devlin, E. H.	Dec. 30, 1926	Leighton, Henry	May 9, 1912
Devlin, Henry	May 1, 1909	Mackinnon, Hugh G.	May 19, 1922
Dickson, James	Oct. 31, 1912	Macauley, D. A.	June 10, 1911
Elliott, Daniel	Nov. 9, 1907	McCulloch, James	Sept. 10, 1910
Emmerson, Joseph	Nov. 9, 1907	McDonald, John	Oct. 3, 1919
Ewart, William	May 19, 1922	McGuckie, Thomas	July 22, 1908
Fairfoull, Robert	June 10, 1911	McKendrick, Andrew	May 27, 1913
Foster, William R.	Dec. 31, 1925	McLean, Michael D.	June 16, 1925
France, Thos.	Nov. 22, 1906	McMillan, J. H.	Sept. 10, 1910
Fraser, Norman	Mar. 4, 1905	McVicar, Samuel	May 1, 1909
Freeman, H. N.	May 1, 1909	Mazey, William John	Oct. 31, 1912
Galloway, C. F. J.	July 22, 1908	Miard, Henry Ernest	May 9, 1912
Garman, Morris W.	Nov. 15, 1917	Millar, John K.	Nov. 22, 1906
Gascoyne, Rowland B.	May 21, 1914	Miller, Andrew Anderson	Oct. 31, 1912
Gillham, John	Jan. 5, 1925	Montgomery, John W.	May 1, 1909
Glover, Francis	Oct. 31, 1912	Moore, Wm. H.	May 17, 1917
Graham, Charles	Nov. 14, 1905	Mordy, Thomas	Sept. 10, 1910

FIRST-CLASS CERTIFICATES ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT, 1904–1911–1919—*Continued.*

Name.	Date.	Name.	Date.
Morrison, Edward	June 24, 1924	Stevens, L. C.	Nov. 27, 1909
Mottishaw, Sam. K.	Nov. 15, 1917	Stewart, R. T.	Sept. 10, 1910
Murray, George	June 21, 1921	Strachan, Robert	Mar. 4, 1905
Newbury, Arthur	June 21, 1920	Strang, James	June 10, 1911
O'Brien, George	May 21, 1914	Taylor, James	May 16, 1918
Ovington, John	May 27, 1913	Thomas, J. D.	Sept. 10, 1910
Peacock, Frank David	Oct. 28, 1911	Thorne, B. L.	Sept. 10, 1910
Penman, Hugh	May 21, 1914	Touhey, James	May 21, 1914
Phelan, Arthur	May 27, 1913	Vincent, Thomas C.	June 24, 1924
Powell, J. W.	June 10, 1911	Walker, William	May 16, 1918
Quinn, John Graham	July 8, 1916	Wallbank, J.	Sept. 10, 1910
Ramsay, Peter Millar	May 16, 1918	Warburton, Ernest Leonard	July 8, 1916
Roper, William	May 13, 1915	Wark, Samuel David	Oct. 3, 1919
Russell, John	May 21, 1914	Wesnedge, William	Dec. 19, 1918
Scott, Thomas Wright	Dec. 22, 1921	Whittaker, John	Dec. 19, 1918
Shanks, John	May 1, 1909	Williams, Jahn Samuel	Dec. 19, 1918
Shenton, T. J.	Sept. 10, 1910	Williams, Thos. B.	May 17, 1917
Shone, Samuel	May 1, 1909	Williams, Thos. H.	Nov. 22, 1906
Smith, A. E.	Oct. 28, 1911	Wilson, Ridgeway R.	Nov. 15, 1917
Smith, Joseph	July 22, 1908	Wilson, William	May 16, 1918
Smith, Thos. Edwin	Dec. 19, 1918	Wylie, John	July 22, 1908
Spicer, J. E.	Oct. 28, 1911	Yates, Frank	Dec. 31, 1925
Spruston, T. A.	Nov. 27, 1909		

SECOND-CLASS CERTIFICATES OF SERVICE.

Name.	Date.	No.	Name.	Date.	No.
Lee, John S.	Mar. 4, 1905	B 9	Walker, David	Mar. 4, 1905	B 14
Millar, J. K.	Mar. 4, 1905	B 10	Powell, William Baden	Mar. 4, 1905	B 16
McCliment, John	Mar. 4, 1905	B 11	Bryden, Alexander	Mar. 4, 1905	B 18
Hunt, John	Mar. 4, 1905	B 13			

SECOND-CLASS CERTIFICATES OF COMPETENCY ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT, 1904."

Name.	Date.	No.	Name.	Date.	No.
Adamson, Robert	Sept. 10, 1910	B 120	Brown, James L.	Oct. 28, 1911	B 136
Allan, Alex. McDiarmid	May 27, 1913	B 167	Brown, John C.	Oct. 23, 1906	B 39
Almond, Walter	Nov. 15, 1917	B 213	Brown, John Todd	May 9, 1912	B 150
Alstead, Robert	June 24, 1924	B 257	Brown, R. J.	Oct. 28, 1911	B 134
Archibald, William	Nov. 22, 1922	B 250	Brown, Robert	May 21, 1914	B 183
Ball, Benjamin	June 21, 1920	B 235	Brown, Robert Sneddon	May 13, 1915	B 196
Barclay, Andrew	July 29, 1905	B 25	Brown, William Gold	Dec. 19, 1918	B 228
Barlow, Benjamin Robt.	Dec. 19, 1918	B 229	Brownrigg, John H.	May 17, 1917	B 124
Bastian, Albert	Nov. 21, 1923	B 256	Bushell, J. P.	May 1, 1909	B 81
Baybutt, Thomas	July 8, 1916	B 206	Carroll, Henry	July 22, 1908	B 62
Bell, John	May 17, 1917	B 212	Caufield, Bernard	Oct. 23, 1906	B 30
Beveridge, William	June 21, 1920	B 233	Caufield, John	July 8, 1916	B 199
Bevis, Nathaniel	Sept. 10, 1910	B 123	Cawthorne, L.	May 1, 1909	B 93
Biggs, John	May 1, 1909	B 94	Challinor, Jno. Thomas	May 27, 1913	B 169
Biggs, John G.	Nov. 2, 1907	B 40	Challoner, Jno. Arthur	May 21, 1914	B 178
Blair, James	May 13, 1915	B 197	Churchill, James	July 22, 1908	B 65
Brace, Tom	Nov. 27, 1909	B 96	Clark, Robt.	June 21, 1921	B 242
Bridge, Edward	Oct. 23, 1906	B 33	Clarkstone, Wm. W.	May 21, 1914	B 180
Brown, David	Sept. 10, 1910	B 108	Commons, Wm.	Sept. 10, 1910	B 115
Brown, George	Dec. 19, 1918	B 225	Coupland, George	May 16, 1918	B 217

SECOND-CLASS CERTIFICATES OF COMPETENCY ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT, 1904"—*Continued.*

Name.	Date.	No.	Name.	Date.	No.
Courtney, A. W.	Oct. 28, 1911	B 138	Joyce, Walter	May 27, 1913	B 168
Cox, Richard	May 9, 1912	B 143	Kirkwood, John R.	Oct. 31, 1912	B 160
Crawford, David	May 1, 1909	B 88	Knowles, James E.	Oct. 28, 1911	B 137
Cunliffe, Thomas	May 1, 1909	B 78	Laird, Robert	May 17, 1917	B 210
Dando, John	May 27, 1913	B 164	Lander, Frank	May 13, 1915	B 195
Daniels, David	Nov. 2, 1907	B 53	Lane, Joseph	May 9, 1912	B 142
Derbyshire, James	Oct. 23, 1906	B 32	Lee, Robert John	Sept. 10, 1910	B 110
Davidson, Hugh	May 27, 1913	B 165	Littler, Matthew	Oct. 31, 1912	B 157
Davies, Stephen	Sept. 10, 1910	B 113	Luck, George	June 10, 1911	B 128
Dennis, Fred. W.	May 21, 1914	B 174	Manifold, Albert	May 9, 1912	B 145
Devlin, Ernest H.	May 21, 1914	B 179	Marsh, John	Nov. 15, 1917	B 216
Devlin, Henry	Nov. 2, 1907	B 44	Mason, Joseph	May 13, 1915	B 193
Dewar, Alexander	Oct. 31, 1912	B 162	Massey, H.	Nov. 27, 1909	B 99
Dickenson, Clifford	May 13, 1915	B 189	Mather, Thomas	June 10, 1911	B 127
Dunsmuir, John	Nov. 14, 1905	B 26	Matusky, A.	May 1, 1909	B 91
Duncan, James	Nov. 21, 1923	B 255	Mayer, Ralph Waldo	May 9, 1912	B 144
Dykes, J. W.	May 1, 1909	B 77	Mazay, W. J.	Nov. 27, 1909	B 101
Eccleston, Wm.	May 1, 1909	B 87	Menzies, Fred	Dec. 22, 1921	B 244
Fairfoull, James	May 21, 1914	B 186	Merryfield, William	July 22, 1908	B 61
Fairfoull, R.	May 1, 1909	B 83	Miard, Hy. E.	Sept. 10, 1910	B 107
Finlayson, James	July 29, 1905	B 21	Michek, John	May 17, 1917	B 188
Ford, Allan	May 27, 1913	B 171	Middleton, Robert	July 22, 1908	B 72
Foster, W. R.	Nov. 27, 1909	B 102	Mitchell, Henry	July 8, 1916	B 201
France, Thos.	May 14, 1905	B 27	Monks, James	Nov. 2, 1907	B 55
Francis, David M.	May 21, 1914	B 182	Moore, Wm. H.	May 21, 1914	B 173
Francis, Enoch	May 1, 1909	B 86	Morgan, John	Nov. 2, 1907	B 43
Francis, James	July 22, 1908	B 63	Morgan, William	Dec. 19, 1918	B 224
Frater, George	July 8, 1916	B 204	Morgan, Daniel	Nov. 21, 1923	B 254
Freeman, Henry N.	Nov. 2, 1907	B 45	Morris, John	July 22, 1908	B 67
Garbett, Richard	Oct. 31, 1912	B 161	Morrison, Edward	Nov. 21, 1923	B 253
Garman, Morris Wilbur	Oct. 31, 1912	B 155	Morton, Robert W.	July 22, 1908	B 59
Gilham, John	June 21, 1920	B 237	Mottishaw, S. K.	Oct. 28, 1911	B 135
Gillespie, Hugh	July 29, 1905	B 24	Murray, George	Oct. 3, 1919	B 232
Gillespie, John	Oct. 23, 1906	B 36	Musgrave, J.	May 1, 1909	B 90
Gould, Alfred	May 13, 1915	B 190	Myers, Peter	May 9, 1912	B 149
Gourlay, Robert	Dec. 19, 1918	B 227	MacKinnon, Hugh G.	Dec. 22, 1921	B 243
Graham, Chas.	Mar. 4, 1905	B 1	McKay, Walter	June 30, 1926	B 262
Gray, David	May 1, 1909	B 76	McLaughlin, Alex	May 13, 1915	B 191
Gray, George	July 8, 1916	B 207	McDonald, J. A.	Oct. 28, 1911	B 133
Greenwell, Archibald	May 16, 1918	B 220	McDonald, John	May 27, 1913	B 172
Hamilton, Robert N.	May 21, 1914	B 175	McFegan, W.	Nov. 31, 1909	B 106
Hastings, Andrew P.	Dec. 19, 1918	B 223	McFegan, Robert	May 18, 1922	B 246
Henderson, Robert	July 22, 1908	B 60	McGarry, Martin	Oct. 31, 1912	B 156
Hodge, William K.	Jan. 5, 1925	B 259	McGuckie, Thomas M.	Oct. 23, 1906	B 35
Holliday, William	Dec. 19, 1918	B 230	McKelvie, J.	May 1, 1909	B 92
Horrocks, Abner G.	June 10, 1911	B 130	McKendrick, And.	Sept. 10, 1910	B 112
Houston, Robert	June 16, 1925	B 260	McLean, Michael D.	June 21, 1920	B 234
Howells, Nathaniel	Nov. 27, 1909	B 97	McMillan, D.	June 10, 1911	B 125
Hudson, George	Sept. 10, 1910	B 121	McNay, Carmichael	May 9, 1912	B 151
Hughes, John C.	Sept. 10, 1910	B 109	McPherson, James E.	July 22, 1908	B 73
Hutton, Isaac	May 21, 1914	B 185	McWhirter, James	June 30, 1926	B 263
Hutton, John	May 9, 1912	B 154	Neen, Joseph	June 10, 1911	B 129
Hynds, William	Dec. 14, 1920	B 240	Newbury, Arthur	May 21, 1914	B 184
Hynds, John	May 18, 1922	B 247	Newton, Wm.	Sept. 10, 1910	B 116
Jackson, Thos. R.	Mar. 4, 1905	B 5	Nicholl, Joseph O.	Dec. 31, 1925	B 261
James, David	Nov. 2, 1907	B 58	O'Brien, Charles	May 9, 1912	B 148
Jarrett, Fred	May 1, 1909	B 84	O'Brien, George	May 1, 1909	B 82
Jaynes, Frank	Sept. 10, 1910	B 111	Osborne, Hugh	Dec. 14, 1920	B 239
John, Francis	July 8, 1916	B 200	Ovington, John	Nov. 2, 1907	B 52
John, Howell	Sept. 10, 1910	B 122	Park, William	June 21, 1920	B 238
Johnson, Moses	May 1, 1909	B 75	Parkinson, T.	May 1, 1909	B 80
Jones, Samuel	May 16, 1918	B 221	Parnham, Charles	Nov. 2, 1907	B 49
Jones, William T.	July 22, 1908	B 66	Quinn, James	May 21, 1914	B 181
Jordon, Thos.	Nov. 27, 1909	B 104	Quinn, John	May 9, 1912	B 146

SECOND-CLASS CERTIFICATES OF COMPETENCY ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT, 1904"—*Continued.*

Name.	Date.	No.	Name.	Date.	No.
Ramsay, Peter Millar	May 17, 1917	B 209	Sutherland, John	May 16, 1918	B 218
Rankin, Geo.	Nov. 27, 1909	B 103	Taylor, James	May 13, 1915	B 194
Raynes, M. T.	Oct. 28, 1911	B 139	Taylor, Robt.	Dec. 30, 1926	B 265
Reid, Wm.	Oct. 28, 1911	B 132	Taylor, Thomas	July 8, 1916	B 203
Renny, James	Oct. 28, 1911	B 140	Thomas, J. B.	Nov. 27, 1909	B 105
Richards, Thomas	Nov. 2, 1907	B 57	Thomas, Joseph D.	Oct. 23, 1906	B 38
Richards, Samuel	May 9, 1912	B 152	Thomas, Daniel W.	Nov. 22, 1922	B 249
Rigby, John	July 29, 1905	B 29	Thompson, Joseph	Sept. 10, 1910	B 114
Roberts, Ebenezer	Sept. 10, 1910	B 117	Touhey, James	May 9, 1912	B 147
Robinson, William	July 22, 1908	B 69	Touhey, William	July 8, 1916	B 205
Rogers, George	May 1, 1909	B 79	Tonge, Thomas	July 22, 1908	B 71
Roper, William	May 9, 1912	B 141	Tully, Thomas	Nov. 15, 1917	B 214
Rowbottom, Thomas	May 16, 1918	B 222	Vanhulle, Peter	Nov. 2, 1907	B 54
Russell, John	Nov. 2, 1907	B 47	Virgo, John	May 1, 1909	B 89
Rutherford, Jasper	May 16, 1918	B 219	Walker, William	May 13, 1915	B 192
Scarpino, Francis	Dec. 19, 1918	B 226	Warburton, Ernest L.	May 27, 1913	B 170
Scott, Thomas Wright	June 21, 1921	B 241	Watson, Adam G.	Nov. 14, 1905	B 28
Shanks, David	Oct. 31, 1912	B 159	Watson, Arthur W.	May 17, 1917	B 211
Shaw, Thomas John	May 27, 1913	B 166	Webster, James S.	June 24, 1924	B 258
Smith, John	Oct. 3, 1919	B 231	Wesnedge, William	Nov. 27, 1909	B 98
Smart, Robert K.	Nov. 22, 1922	B 248	White, John	Nov. 2, 1907	B 48
Somerville, Alex.	Mar. 4, 1905	B 4	Whitehouse, William	Oct. 31, 1912	B 163
Spruston, Robert Lecce	July 8, 1916	B 202	Williams, John Samuel	Nov. 15, 1917	B 215
Spruston, Thos. A.	Nov. 2, 1907	B 46	Williams, Watkin	Sept. 10, 1910	B 118
Stafford, Matthew	June 10, 1911	B 131	Wilson, Robinson	May 21, 1914	B 177
Stewart, J. M.	May 1, 1909	B 95	Wilson, Thomas	July 22, 1908	B 74
Stobbart, Jacob	May 9, 1912	B 153	Wilson, William	July 22, 1908	B 70
Stockwell, William	Nov. 2, 1907	B 56	Wood, Thos. James	May 21, 1914	B 176
Strang, Thomas	Oct. 31, 1912	B 158	Worthington, Joseph	May 1, 1909	B 85
Stubbs, Clement	May 18, 1922	B 245	Yates, Frank	Nov. 22, 1922	B 251

THIRD-CLASS CERTIFICATES ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT, 1904."

Name.	Date.	No.	Name.	Date.	No.
Adamson, Robert	May 1, 1909	C 323	Bateman, Joseph William	Oct. 28, 1913	C 551
Adamson, Wm.	Dec. 22, 1921	C 721	Bauld, Wm.	June 10, 1911	C 422
Ainsworth, Edward	May 16, 1918	C 674	Baxter, Robert	Oct. 28, 1911	C 450
Allan, Alexander	Oct. 28, 1911	C 430	Baybutt, Thomas	May 27, 1913	C 548
Almond, Alex	Oct. 1, 1907	C 252	Beard, Henry C.	May 30, 1923	C 751
Almond, Walter	July 22, 1908	C 286	Beeton, D. H.	May 1, 1909	C 338
Alstead, Robt.	June 21, 1921	C 719	Bell, Fred	May 27, 1913	C 514
Anderson, John	Oct. 28, 1911	C 437	Bell, John	May 9, 1912	C 477
Anderson, Peter Blane	Nov. 15, 1917	C 660	Bennett, Andrew M.	Nov. 15, 1917	C 661
Anderson, Robt.	Oct. 14, 1914	C 599	Bennett, John	Oct. 14, 1914	C 597
Angell, William	May 21, 1914	C 591	Bennie, John	June 10, 1911	C 411
Arbuckle, John	May 13, 1915	C 622	Beveridge, Wm.	June 10, 1911	C 396
Archibald, Geo.	May 21, 1914	C 569	Biggs, John	Mar. 4, 1905	C 210
Archibald, Thomas	Oct. 28, 1911	C 454	Biggs, Thomas	Oct. 28, 1911	C 449
Ball, Alfred	May 17, 1917	C 635	Birchell, Richard	Oct. 1, 1907	C 266
Bann, Thomas	Oct. 31, 1912	C 494	Blair, James	Oct. 31, 1912	C 502
Baggaley, J.	July 22, 1908	C 300	Blas, Emil	June 24, 1924	C 774
Bain, James	May 27, 1913	C 546	Blewett, Ernest	July 22, 1908	C 298
Bainbridge, James	Nov. 21, 1922	C 744	Blinkhorn, Thomas	Dec. 19, 1918	C 681
Ball, Benjamin	May 21, 1914	C 583	Bond, Frank	June 30, 1926	C 797
Barker, Robert	June 10, 1911	C 415	Bradley, William	July 22, 1908	C 291
Barlow, B. R.	May 1, 1909	C 337	Bradley, Wilfred	May 17, 1922	C 733
Barrass, Robt.	June 30, 1926	C 795	Bridge, Edward	July 29, 1905	C 223
Bastian, Albert	May 30, 1923	C 750	Briscoe, F.	July 22, 1908	C 309
Bate, Horace	Dec. 30, 1926	C 802	Broderick, Matthew	Jan. 21, 1913	C 525

THIRD-CLASS CERTIFICATES ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT, 1904"—*Continued.*

Name.	Date.	No.	Name.	Date.	No.
Brown, Arthur A.	Oct. 14, 1914	C 596	Davidson, Hugh	May 9, 1919	C 464
Brown, David	Nov. 1, 1909	C 348	Davies, Alfred	Oct. 3, 1912	C 691
Brown, George	July 8, 1916	C 626	Davies, Evan Thomas	May 9, 1912	C 463
Brown, George A.	Dec. 14, 1920	C 706	Davies, John H. C.	May 17, 1922	C 729
Brown, James	Sept. 10, 1910	C 364	Davis, John David	May 16, 1918	C 669
Brown, James	June 10, 1911	C 412	Davis, William	May 1, 1909	C 339
Brown, James	July 8, 1916	C 625	Dean, Andrew	Dec. 19, 1918	C 688
Brown, Jas. Millie	May 13, 1915	C 615	Dean, Joseph	May 13, 1915	C 611
Brown, John	Sept. 10, 1910	C 392	Derbyshire, A.	June 10, 1911	C 401
Brown, Robert	Oct. 28, 1911	C 451	Dewar, Alex.	Sept. 10, 1910	C 369
Brown, Robert D.	June 10, 1911	C 423	Devlin, Edward	Oct. 23, 1906	C 241
Brown, Robert S.	June 10, 1911	C 408	Devlin, Ernest Henry	May 27, 1913	C 538
Brown, Wm. A.	May 21, 1914	C 576	Devlin, John	Oct. 3, 1919	C 693
Brown, William Gold	July 8, 1916	C 629	Devoy, William	May 17, 1917	C 638
Bruce, Preston	Dec. 14, 1920	C 712	Dickenson, Clifford	May 27, 1917	C 532
Bullen, Thomas	Sept. 10, 1910	C 379	Dickie, Leslie	Nov. 20, 1923	C 762
Bushell, Jas. P.	Oct. 1, 1907	C 264	Dingsdale, Geo.	Oct. 28, 1911	C 459
Bysouth, Thomas	May 16, 1918	C 673	Dobie, Thomas	Dec. 22, 1921	C 726
Cairns, Andrew	June 10, 1911	C 420	Doherty, J. J.	May 1, 1909	C 340
Cairns, Robert	May 27, 1913	C 539	Doney, John	Mar. 4, 1905	C 211
Caldwell, Daniel	May 17, 1917	C 639	Donnachie, John	June 10, 1911	C 425
Caldwell, Peter	June 21, 1921	C 715	Doodson, Robert	Oct. 28, 1911	C 455
Calverly, Joseph	Sept. 10, 1910	C 375	Dorrance, Orlin William	Jan. 21, 1913	C 517
Camamile, Hollis	Oct. 28, 1911	C 443	Douglas, D. B.	Oct. 23, 1906	C 235
Campbell, Samuel	Nov. 15, 1917	C 662	Dow, And. Y.	May 21, 1914	C 587
Campbell, Andrew	Nov. 27, 1917	C 651	Drybrough, Robert	June 21, 1920	C 701
Carroll, George	Nov. 21, 1922	C 746	Dunn, Wm.	Oct. 14, 1914	C 606
Carr, Peter	Oct. 31, 1912	C 497	Dunnigan, Richard	June 21, 1921	C 716
Carson, George	Mar. 17, 1917	C 663	Dykes, Isaac	June 10, 1911	C 409
Cartwright, Wm. H.	June 24, 1924	C 768	Dykes, Joseph W.	Oct. 1, 1907	C 248
Cass, Wm.	Dec. 30, 1926	C 800	Eccleston, Thomas	May 17, 1917	C 482
Catchpole, Charles	July 29, 1905	C 227	Eccleston, John I.	May 30, 1923	C 757
Caufield, Edward	May 16, 1918	C 670	Edwards, John	May 27, 1913	C 542
Caufield, John	May 1, 1909	C 321	Elliott, John	May 27, 1913	C 541
Challoner, Arthur	Oct. 28, 1911	C 433	Elmes, George	Oct. 31, 1912	C 511
Chambers, Ralph H.	Dec. 14, 1920	C 709	Evans, D.	July 22, 1908	C 284
Chapman, Wm.	Dec. 22, 1921	C 720	Ewing, Robert	May 13, 1915	C 608
Chapman, John	May 30, 1923	C 753	Fairfoull, James	Oct. 28, 1911	C 453
Chapman, Thomas H.	Jan. 5, 1925	C 779	Farrow, John William	Dec. 19, 1918	C 683
Charnock, John	Nov. 15, 1917	C 653	Ferryman, Henry	June 21, 1920	C 697
Cheetham, Ben	July 22, 1908	C 311	Fitzpatrick, T. J.	Oct. 2, 1911	C 452
Chester, John	Oct. 28, 1911	C 440	Flockart, David	Jan. 21, 1913	C 531
Clark, Lewis	June 10, 1911	C 405	Ford, Allen	Oct. 28, 1911	C 445
Clark, Walter Pattison	May 9, 1912	C 480	Fowler, Robert	Oct. 31, 1912	C 495
Clarkson, Robert	June 21, 1920	C 696	Francis, David Morgan	Oct. 28, 1913	C 558
Clarkstone, Wm. W.	Oct. 28, 1911	C 431	Francis, James	Oct. 1, 1907	C 250
Clarkstone, Hugh	May 17, 1922	C 736	Frater, George	May 13, 1915	C 616
Cleaves, Walter	May 9, 1912	C 475	Freeman, H. N.	Nov. 14, 1905	C 230
Clifford, William	July 22, 1908	C 313	Frew, William M.	May 30, 1923	C 752
Cloke, Chas. E.	June 16, 1925	C 782	Frew, Andrew	Nov. 27, 1909	C 360
Coates, Frank	June 16, 1925	C 789	Frodsham, Vincent	July 22, 1908	C 282
Colgrove, Charles Henry	Dec. 19, 1918	C 679	Furbow, John	Jan. 21, 1913	C 528
Commons, William	July 22, 1908	C 304	Gabriel, Ernest P.	May 17, 1922	C 739
Coupland, David	June 21, 1921	C 713	Garbett, Richard	Sept. 10, 1910	C 377
Cooke, Joseph	Mar. 4, 1905	C 209	Gascoyne, Rowland B.	Jan. 21, 1913	C 513
Coomb, Alexander	May 27, 1913	C 533	Geater, Jas. Gordon	May 21, 1914	C 573
Cooper, John Andrew	Dec. 19, 1918	C 689	Gemmell, James	Oct. 31, 1912	C 505
Cope, Frank	Oct. 28, 1913	C 549	Gillham, John	May 13, 1915	C 623
Coulthard, James	June 10, 1911	C 407	Gillies, William	May 16, 1918	C 668
Crawford, David	Mar. 4, 1905	C 208	Glenn, James	Oct. 28, 1911	C 435
Cunningham, G. F.	Nov. 11, 1905	C 229	Gordon, Davis John	May 9, 1912	C 474
Cunliffe, Thos.	Oct. 1, 1907	C 265	Gourley, Robert	May 9, 1912	C 470
Dabb, Owen	May 21, 1914	C 578	Gray, George	May 9, 1912	C 467
Dando, John	May 9, 1912	C 465	Gregory, William	May 30, 1923	C 756
Davey, George	June 21, 1921	C 718	Gregson, John B.	Dec. 31, 1925	C 790

THIRD-CLASS CERTIFICATES ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT, 1904"—*Continued.*

Name.	Date.	No.	Name.	Date.	No.
Green, William	Nov. 15, 1917	C 659	Joyce, Walter	Nov. 27, 1909	C 361
Greenhorn, John	May 21, 1914	C 575	Judge, Peter	Sept. 10, 1910	C 391
Groat, Ed. Murray	Nov. 20, 1923	C 764	Keenan, Wm. James	June 10, 1911	C 426
Griffiths, Edward	Oct. 31, 1914	C 508	Kelly, Ernest	May 17, 1917	C 646
Gunniss, Matthew	May 9, 1912	C 460	Kemp, Wm.	Oct. 14, 1914	C 594
Haile, Joseph G.	May 17, 1922	C 731	Kingham, Alfred	Oct. 28, 1913	C 559
Hallinan, William	May 1, 1909	C 343	Kirkeberg, H. S.	Nov. 27, 1909	C 350
Hall, Joseph	May 17, 1922	C 742	Klejko, Steve	Dec. 14, 1920	C 703
Halsall, J.	July 22, 1908	C 307	Lane, Joseph	Oct. 1, 1907	C 254
Hamilton, John	Oct. 28, 1911	C 444	Lavin, Joseph	June 21, 1920	C 700
Hamilton, Robert Nesbitt	Oct. 28, 1913	C 550	Leeman, T.	May 1, 1909	C 345
Hampton, Samuel	Nov. 15, 1917	C 650	Lester, Frank	May 17, 1922	C 734
Hancock, Arthur	Nov. 15, 1917	C 656	Lewis, Benj. J.	Sept. 10, 1910	C 386
Hardy, Edward	June 21, 1920	C 694	Leynard, Paul	May 17, 1917	C 637
Hartley, Thomas	Oct. 31, 1912	C 510	Liddle, John	July 29, 1905	C 228
Hart, Daniel M.	May 17, 1922	C 730	Lindsay, William	May 17, 1917	C 642
Harwood, Fred	Sept. 10, 1910	C 384	Linn, George Y.	May 17, 1922	C 737
Harvey, Thomas	May 9, 1912	C 466	Littler, James	June 30, 1926	C 792
Harvie, George	Sept. 10, 1910	C 378	Littler, John	June 10, 1911	C 410
Heaps, Robert	Sept. 10, 1910	C 373	Littler, Matthew	June 10, 1911	C 417
Hemer, Herbert	Oct. 14, 1914	C 595	Littler, Robert	June 10, 1911	C 418
Henney, Jonathan	June 10, 1911	C 424	Livingstone, Alex	Oct. 28, 1911	C 436
Hendry, James	May 9, 1912	C 471	Loxton, George	June 10, 1911	C 428
Herd, William	Dec. 19, 1918	C 682	Loxton, John	June 10, 1911	C 416
Heyes, Edward	May 1, 1909	C 320	Lloyd, Thomas	May 17, 1922	C 740
Hilley, Fred	July 22, 1908	C 290	Luck, George	May 1, 1909	C 318
Hilton, Mathias	Dec. 19, 1918	C 677	Lynch, Stewart	Oct. 28, 1911	C 432
Hilton, R. G.	Sept. 10, 1910	C 376	Mackie, John	June 10, 1911	C 421
Hindmarsh, John G.	June 30, 1926	C 799	Makin, J. Wm.	Sept. 10, 1910	C 385
Hindmarsh, Peter	May 30, 1923	C 755	Malone, John	May 21, 1914	C 585
Hodson, R. H.	Mar. 4, 1905	C 216	Malone, Patrick	Oct. 1, 1907	C 247
Hodge, William K.	Nov. 20, 1923	C 761	Maltman, James	Oct. 31, 1912	C 501
Holdsworth, William	May 16, 1918	C 671	Mansfield, A.	May 1, 1909	C 336
Holliday, William	July 8, 1916	C 634	Marrs, John	May 17, 1917	C 640
Hopkins, Harry	Dec. 31, 1925	C 791	Marsh, Daniel Parks	May 27, 1913	C 543
Horbury, Joseph W.	June 10, 1911	C 406	Marsh, John	Oct. 1, 1907	C 270
Horrocks, A. G.	May 1, 1909	C 324	Martin, James	June 10, 1911	C 398
Horwood, S.	July 22, 1908	C 312	Mason, Joseph	July 22, 1908	C 297
Houston, Robert	July 8, 1916	C 631	Massey, Henry	May 1, 1909	C 317
Howells, Nathaniel	May 1, 1909	C 316	Mather, Thomas	July 22, 1908	C 293
Hunter, Peter M.	June 30, 1926	C 798	Matusky, Andrew	Oct. 1, 1907	C 259
Hunter, Thomas	June 16, 1925	C 786	Mawson, J. T.	Nov. 27, 1909	C 359
Hutchison, Ben	Nov. 14, 1905	C 232	Maxwell, Geo.	May 21, 1914	C 571
Hutchison, Fred	Nov. 27, 1909	C 358	McAlpine, John	Mar. 4, 1905	C 217
Hynd, John	Dec. 14, 1920	C 707	McArthur, John Malcolm	May 17, 1917	C 648
Hynds, William	July 8, 1916	C 632	McArthur, Robert	Dec. 22, 1921	C 723
Ireson, John	Oct. 31, 1912	C 507	McBroom, Al.	July 2, 1908	C 287
Irvine, David	June 10, 1911	C 413	McCourt, John	Oct. 14, 1914	C 605
Jack, John	May 21, 1914	C 582	McCourt, Thos.	Dec. 30, 1926	C 805
Jackson, Harry	June 24, 1924	C 776	McCulloch, James	May 1, 1909	C 315
James, Thos.	May 21, 1914	C 588	McDonald, John	Oct. 28, 1911	C 448
Jardine, Geo. Edward	Jan. 21, 1913	C 521	McFagen, Alexander	May 9, 1912	C 490
Jarrett, Fred. J.	Oct. 1, 1907	C 256	McFegan, Robert	June 21, 1920	C 698
Jaynes, Frank	July 22, 1908	C 277	McFegan, W.	May 1, 1909	C 319
Jemson, J. W.	Mar. 4, 1905	C 205	McGarry, Martin	May 1, 1909	C 326
Jenkins, John	Sept. 10, 1910	C 390	McGrath, James	July 8, 1916	C 630
John, Howel	July 22, 1908	C 305	McGuckie, Jno. M.	May 21, 1914	C 562
Johnson, Moses	Oct. 1, 1907	C 258	McGuckie, Thomas	July 29, 1905	C 226
Johnston, Fred	Dec. 30, 1926	C 803	McGuire, Thomas	Oct. 28, 1913	C 553
Johnston, Robert	May 9, 1912	C 479	McIntyre, Neil	May 21, 1914	C 574
Jones, Alf. Geo.	May 21, 1914	C 584	McKay, Walter	Nov. 20, 1923	C 763
Jones, Samuel	May 27, 1913	C 518	McKelvie, J.	July 22, 1908	C 285
Jones, William C.	Jan. 21, 1913	C 556	McKenzie, Peter	June 10, 1911	C 427
Jones, William Ernest	Oct. 28, 1913	C 221	McKibben, Matthew	May 21, 1914	C 580
Jones, W. T.	Mar. 4, 1905	C 544	McKinley, John	Oct. 28, 1914	C 442

THIRD-CLASS CERTIFICATES ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT, 1904"—*Continued.*

Name.	Date.	No.
McLaren, John	May 30, 1923	C 754
McLaughlin, James	May 9, 1912	C 485
McLachlan, Alex	June 10, 1912	C 419
McLean, M. D.	Sept. 10, 1910	C 389
McLellan, William	Mar. 4, 1905	C 219
McLeod, James	July 22, 1908	C 296
McLeod, John	May 13, 1915	C 609
McMeakin, James	May 13, 1915	C 612
McMillan, D.	Sept. 10, 1910	C 363
McMillan, Edward	Oct. 31, 1912	C 493
McMillan, Neil	Nov. 15, 1917	C 654
McNay, Carmichael	July 22, 1908	C 306
McNeill, Adam L.	July 22, 1908	C 281
McNeill, Robert	Sept. 10, 1910	C 387
McWhirter, Archibald	June 30, 1926	C 794
Meek, Matthew	May 9, 1912	C 484
Meikle, Harry Alexander	July 8, 1916	C 627
Menzies, Frederick	Dec. 14, 1920	C 704
Merrifield, George	Oct. 23, 1906	C 239
Merrifield, William	Oct. 23, 1906	C 236
Michek, John	May 21, 1914	C 563
Miles, John	June 10, 1911	C 414
Mitchell, Charles	May 1, 1909	C 322
Mitchell, Henry	Sept. 10, 1910	C 366
Monks, James	Nov. 14, 1905	C 234
Moore, George	Oct. 23, 1906	C 242
Moore, John	May 1, 1909	C 335
Moreland, Thomas	July 22, 1908	C 299
Morgan, John	July 29, 1905	C 224
Morgan, William	May 17, 1917	C 636
Morgan, Cornelius	Dec. 22, 1921	C 725
Morgan, John	June 24, 1924	C 773
Morris, David	May 9, 1912	C 472
Mottishaw, Samuel K.	Oct. 23, 1906	C 237
Murdock, Jno. Y.	May 21, 1914	C 564
Murray, Robt.	June 30, 1926	C 796
Myers, Peter	Oct. 28, 1911	C 446
Nanson, T. H.	July 22, 1908	C 280
Nash, George William	May 17, 1917	C 565
Nash, George F.	Dec. 22, 1921	C 727
Nee, Wm. R.	Dec. 22, 1921	C 724
Neen, Joseph	Nov. 27, 1909	C 352
Nelson, Horatio	Oct. 1, 1907	C 263
Neilson, William	May 9, 1912	C 481
Newman, John	Oct. 14, 1914	C 603
Nicholson, James	May 9, 1912	C 469
Nimmo, James	May 9, 1912	C 461
Norris, Joshua	Oct. 28, 1913	C 557
Nuttall, Wm.	June 16, 1925	C 780
Oakes, Robert	Oct. 31, 1912	C 498
O'Brien, Charles	Nov. 27, 1909	C 349
Odgers, Eli	Jan. 21, 1913	C 523
Orr, Alexander	Oct. 28, 1911	C 434
Osborne, Hugh	Oct. 28, 1913	C 555
Oswald, Geo. L.	Sept. 10, 1910	C 370
Owen, Thomas	May 1, 1909	C 347
Park, William	Dec. 19, 1918	C 684
Parks, Alexander	Jan. 21, 1913	C 519
Parker, L.	May 1, 1909	C 341
Parkinson, James Wm.	Nov. 15, 1917	C 655
Parkinson, T.	July 22, 1908	C 289
Parkinson, Thomas	June 24, 1924	C 769
Parrott, Jas. E.	May 21, 1914	C 590
Parson, Herbert	May 13, 1915	C 621
Pearson, Jonathan	May 9, 1912	C 473
Penman, Hugh	Oct. 28, 1913	C 552
Perry, Geo. Harewood	May 17, 1917	C 643
Phillips, Richard S.	May 17, 1917	C 620
Phillips, James	Nov. 21, 1922	C 749
Pickup, A.	July 22, 1908	C 310
Picton, W.	May 1, 1909	C 333
Plank, Samuel	Nov. 14, 1905	C 233
Pollock, John	May 30, 1923	C 760
Poole, Samuel	May 27, 1913	C 536
Price, Walter	Sept. 10, 1910	C 371
Puckey, John Thomas	Dec. 19, 1918	C 687
Quayle, Alex. B.	Jan. 5, 1925	C 778
Quinn, James	Oct. 28, 1911	C 441
Quinn, John	Oct. 28, 1911	C 429
Radford, Albert	May 21, 1914	C 579
Rallison, R.	July 22, 1908	C 279
Rallison, James	May 30, 1923	C 759
Rankin, George	July 22, 1908	C 275
Rankin, Wm. Shaw	May 9, 1912	C 489
Ratcliffe, Thomas	Oct. 1, 1907	C 253
Raynor, Fred	Oct. 1, 1907	C 257
Reid, Robert	Sept. 10, 1910	C 383
Reid, Thos.	May 21, 1914	C 592
Reid, Wm.	June 10, 1911	C 403
Reilly, Thomas	July 22, 1908	C 303
Renney, Jas.	Nov. 27, 1909	C 354
Richards, James	Nov. 1, 1907	C 249
Richards, Samuel	Oct. 23, 1906	C 244
Richardson, J. H.	Oct. 28, 1911	C 458
Rigby, John	July 29, 1905	C 225
Roberts, Arthur	June 24, 1924	C 772
Roberts, Ebenezer	May 1, 1909	C 327
Robinson, Michael	May 1, 1909	C 332
Robinson, Asa	June 16, 1925	C 787
Robson, James	June 16, 1925	C 788
Robson, Thomas	May 21, 1914	C 566
Rogers, Ellis	May 13, 1915	C 624
Roper, William	July 22, 1908	C 274
Ross, William	June 21, 1920	C 702
Rowan, Alexander	Oct. 31, 1912	C 500
Rowan, John	Oct. 14, 1914	C 602
Rowbottom, Thomas	Oct. 31, 1914	C 492
Royle, Edward	Oct. 31, 1912	C 506
Russell, Robert	Nov. 27, 1909	C 351
Rutherford, Jasper	May 17, 1917	C 644
Rutledge, Edwin	July 22, 1908	C 302
Scales, Joseph	May 17, 1922	C 738
Scott, Henry	July 22, 1908	C 294
Saunders, Eustace L.	Jan. 21, 1913	C 520
Scarpino, Francis	May 17, 1917	C 649
Seddon, James	Oct. 3, 1919	C 692
Shanks, David	Sept. 10, 1910	C 372
Sharp, James	May 1, 1909	C 325
Sharpe, Henry	June 16, 1925	C 783
Sharples, J. T.	Sept. 10, 1910	C 380
Shea, Thomas J.	Dec. 22, 1921	C 722
Shearer, L.	May 1, 1909	C 330
Shields, Thomas	May 16, 1918	C 667
Shipley, John W.	Oct. 28, 1911	C 456
Shooter, Joseph	Oct. 1, 1907	C 261
Shortman, J.	May 1, 1909	C 331
Simister, J. H.	Nov. 27, 1909	C 353
Simister, W.	May 1, 1909	C 334

THIRD-CLASS CERTIFICATES ISSUED UNDER "COAL-MINES REGULATION ACT FURTHER AMENDMENT ACT, 1904"—*Continued.*

Name.	Date.	No.	Name.	Date.	No.
Sim, James	Dec. 14, 1920	C 711	Thompson, Joseph	Oct. 1, 1907	C 269
Simms, Hubert Allan	Jan. 21, 1913	C 526	Thomson, Duncan	Mar. 4, 1905	C 218
Sinclair, William	Jan. 21, 1913	C 527	Tolley, John	Dec. 19, 1918	C 678
Skelton, Thos.	May 1, 1909	C 344	Touhey, William	May 27, 1913	C 547
Slee, Thomas	June 30, 1926	C 793	Travis, Joseph	June 21, 1920	C 699
Smith, A. E.	Sept. 10, 1910	C 367	Tully, Thomas	May 9, 1912	C 468
Smellie, John	May 29, 1923	C 755	Tune, Elijah	May 9, 1912	C 476
Smith, John Watterson	May 16, 1918	C 665	Unsworth, John	June 16, 1925	C 784
Smith, Joseph	Mar. 4, 1905	C 207	Vardy, Robt.	May 21, 1914	C 570
Smith, Richard Beveridge	Oct. 28, 1913	C 561	Vaughan, John Henry	Oct. 28, 1913	C 560
Smith, Thomas	Dec. 30, 1926	C 804	Vincent, Thomas C.	Nov. 21, 1922	C 745
Smith, Thos. J.	Oct. 1, 1907	C 271	Walker, George	July 8, 1916	C 633
Smith, Thomas	May 9, 1912	C 486	Walker, Jas. Alexander	Oct. 31, 1912	C 496
Smith, Thomas	Dec. 14, 1920	C 705	Walker, Robert C.	May 17, 1922	C 728
Snow, Aubrey	June 15, 1918	C 675	Walker, Wm.	May 21, 1914	C 586
Sopwith, Reginald Scott	Jan. 21, 1913	C 512	Wallace, Fred	Oct. 1, 1907	C 260
*Sparks, Edward	Oct. 1, 1907	C 255	Walls, John	Dec. 14, 1920	C 710
Spencer, G.	May 1, 1909	C 329	Warburton, Ernest L.	June 10, 1911	C 399
Spruston, R. L.	Nov. 27, 1909	C 355	Ward, Ernest Hedley	May 17, 1917	C 641
Spruston, Thomas A.	Mar. 4, 1905	C 206	Wardrop, James	Oct. 31, 1912	C 504
Stafford, M.	Sept. 10, 1910	C 382	Watson, Adam G.	Mar. 4, 1905	C 212
Starr, Wallace	May 9, 1912	C 488	Watson, Arthur W.	May 27, 1913	C 535
Staton, Edward	May 21, 1914	C 581	Watson, George	July 22, 1908	C 288
Steele, Walter	Oct. 28, 1911	C 439	Watson, Joseph	Jan. 21, 1913	C 515
Stewart, George	May 27, 1913	C 534	Watson, William	Oct. 22, 1906	C 246
Stewart, James M.	Oct. 23, 1906	C 240	Watson, William	May 17, 1917	C 645
Stewart, James B.	June 16, 1925	C 785	Watson, John	May 17, 1922	C 743
Stewart, John	Dec. 30, 1926	C 801	Weaver, William	Nov. 17, 1922	C 748
Stobbart, David	June 16, 1925	C 781	Webb, Herbert	Oct. 28, 1911	C 457
Stockwell, William	Oct. 23, 1906	C 238	Webster, James Stewart	Dec. 19, 1918	C 685
Stone, Wm. C.	June 21, 1921	C 714	Weeks, John	Mar. 4, 1905	C 214
Strachan, John	Oct. 14, 1914	C 604	West, James Gloag	May 16, 1918	C 676
Strang, James	May 13, 1915	C 614	Whalley, William	Dec. 19, 1918	C 686
Strang, Thomas	June 10, 1911	C 400	White, James	Oct. 31, 1912	C 499
Strang, Wm.	June 10, 1911	C 395	White, John	Oct. 22, 1906	C 245
Strang, William L.	Jan. 5, 1925	C 777	Wilkinson, Edward	Oct. 28, 1911	C 438
Sutherland, John	May 27, 1913	C 545	Williams, John Sam.	June 10, 1911	C 404
Sweeney, John	May 17, 1922	C 735	Williams, Watkin	June 22, 1908	C 301
Taylor, Charles M.	Mar. 4, 1905	C 213	Wilson, Joseph	June 24, 1924	C 767
Taylor, Hugh	Jan. 21, 1913	C 530	Wilson, Robinson	June 10, 1911	C 397
Taylor, James	May 21, 1914	C 567	Wilson, Thomas M.	Oct. 1, 1907	C 272
Taylor, Jonathan	Dec. 19, 1918	C 680	Wilson, William	Oct. 1, 1907	C 262
Taylor, J. T.	Oct. 28, 1911	C 447	Wilson, William	May 17, 1917	C 674
Taylor, Leroy	Sept. 10, 1910	C 381	Winstanley, Robert	Nov. 21, 1922	C 747
Taylor, Robert	June 21, 1920	C 695	Winstanley, Oliver	May 17, 1922	C 741
Taylor, Thomas	May 21, 1914	C 577	Winstanley, H.	July 22, 1908	C 283
Tennant, Joseph	June 24, 1924	C 770	Wintle, Thomas A.	July 29, 1905	C 222
Thacker, Geo.	May 27, 1913	C 537	Witherington, George	Oct. 28, 1913	C 554
Thomas, Thomas	Sept. 10, 1910	C 365	Wood, Thos. James	Oct. 31, 1912	C 491
Thomas, John B.	Nov. 14, 1905	C 231	Worthington, J.	July 22, 1908	C 295
Thomas, Joseph	Mar. 4, 1905	C 220	Wright, John	May 21, 1914	C 593
Thomas, Warriett	Oct. 1, 1907	C 273	Wright, Robert	May 21, 1914	C 589
Thomason, Charles	Nov. 15, 1917	C 657	Wright, William	Jan. 21, 1913	C 522
Thompson, Charles	June 24, 1924	C 765	Yates, Frank	May 17, 1922	C 732
Thompson, Thomas	Oct. 1, 1917	C 267	Yeowart, Hudson	June 24, 1924	C 771
Thompson, John	Oct. 31, 1912	C 509	Young, Alexander	May 16, 1918	C 666

* C 314 issued in lieu of C 255 destroyed by Fernie fire.

COAL-MINE OFFICIALS.

Third-class Certificates issued under "Coal-mines Regulation Act Further Amendment Act, 1904," sec. 38, subsec. (2), in exchange for Certificates issued under the "Coal-mines Regulation Act Amendment Act, 1901."

Name.	Date.	No.	Name.	Date.	No.
Adam, Robert	Oct. 12, 1904	C 42	Lewis, Thos.	Oct. 11, 1904	C 35
Addison, Thos.	Dec. 10, 1904	C 52	Marsden, John	May 3, 1904	C 21
Aitken, James	Oct. 24, 1904	C 44	Miard, Harry E.	Mar. 3, 1905	C 76
Allsop, Harry	Oct. 11, 1904	C 34	Middleton, Robt.	Feb. 11, 1905	C 71
Ashman, Jabez	Feb. 5, 1907	C 131	Miller, Thos. K.	Feb. 21, 1905	C 74
Auchinvole, Alex	Mar. 29, 1905	C 89	McKenzie, John R.	Oct. 12, 1904	C 40
Barclay, Andrew	April 27, 1904	C 19	McKinnon, Arch'd	April 3, 1905	C 102
Barclay, James	April 27, 1904	C 20	McMillan, Peter	Mar. 29, 1905	C 94
Barclay, John	April 17, 1905	C 111	McMurtrie, John	Mar. 29, 1905	C 96
Bickle, Thos.	Oct. 11, 1904	C 37	Moore, Wm. H.	June 17, 1905	C 119
Bowie, James	May 13, 1905	C 116	Morris, John	Dec. 27, 1904	C 57
Briscoe, Edward	Oct. 10, 1906	C 129	Myles, Walter	April 3, 1905	C 100
Campbell, Dan	Mar. 29, 1905	C 93	Nash, Isaac	June 1, 1904	C 120
Carr, Jos. E.	Oct. 11, 1904	C 36	Neave, Wm.	Oct. 12, 1904	C 43
Carroll, Harry	Mar. 29, 1905	C 98	Nelson, James	April 27, 1904	C 16
Clarkson, Alexander	April 27, 1904	C 18	Nimmo, Richard E.	April 18, 1911	C 133
Collishaw, John	Feb. 7, 1905	C 68	O'Brien, Geo.	Feb. 6, 1905	C 66
Comb, John	Mar. 23, 1904	C 2	Pearse, Thomas W. H.	April 14, 1916	C 138
Courtney, A. W.	Nov. 2, 1904	C 45	Power, John	Sept. 8, 1920	C 142
Crawford, Frank	April 6, 1904	C 7	Price, Jas.	Nov. 8, 1904	C 50
Daniels, David	April 27, 1904	C 12	Rafter, Wm.	Mar. 29, 1905	C 95
Davidson, David	April 3, 1905	C 106	Reid, James	Mar. 23, 1904	C 1
Davidson, John	Mar. 29, 1905	C 87	Richards, Thos.	April 27, 1904	C 14
Devlin, Henry	Oct. 12, 1904	C 41	Ross, John	April 3, 1905	C 101
Dobbie, John	Nov. 27, 1905	C 126	Roughead, George	Jan. 30, 1907	C 130
Dudley, James	Mar. 22, 1905	C 114	Ryan, John	Dec. 28, 1904	C 59
Duncan, Thomas	Aug. 29, 1906	C 128	Sanders, John W.	April 3, 1905	C 107
Dunlap, Henry	Nov. 21, 1904	C 51	Shenton, Thos. J.	July 25, 1904	C 30
Dunn, Geo.	Dec. 19, 1904	C 56	Shepherd, Henry	June 13, 1904	C 26
Dunsmuir, John	Mar. 29, 1905	C 90	Smith, Geo.	Mar. 29, 1905	C 84
Eccleston, Wm.	Mar. 15, 1905	C 80	Somerville, Alex.	Mar. 24, 1904	C 3
Fagan, David	April 6, 1905	C 109	Stauss, Chas. F.	Feb. 9, 1905	C 69
Farquharson, John	April 27, 1904	C 17	Steele, Jas.	Mar. 29, 1905	C 92
Findlayson, James	June 6, 1904	C 25	Steele, John	June 4, 1913	C 4
Fulton, Hugh T.	April 3, 1905	C 105	Stewart, Duncan H.	Mar. 28, 1904	C 137
Gibson, Edward	May 30, 1905	C 118	Stewart, John	April 3, 1904	C 104
Gilchrist, Wm.	Mar. 29, 1905	C 85	Stewart, Daniel W.	May 16, 1904	C 23
Gillespie, Hugh	April 6, 1904	C 8	Stoddart, Jacob	Feb. 21, 1905	C 73
Gillespie, John	April 6, 1904	C 5	Strachan, Robt.	April 27, 1904	C 15
Gould, Alfred	April 17, 1906	C 112	Strang, James	April 27, 1904	C 10
Green, Francis	Oct. 11, 1904	C 38	Sullivan, John	July 4, 1916	C 139
Handlen, Jas.	June 16, 1904	C 122	Summers, Joseph	May 17, 1920	C 141
Harmison, Wm.	Feb. 3, 1905	C 65	Thomas, John	Mar. 29, 1905	C 97
Hescott, John	Jan. 16, 1905	C 62	Vass, Robt.	Dec. 12, 1904	C 53
Hoggan, Wm.	June 6, 1911	C 134	Vater, Charles	April 6, 1904	C 66
John, David	Nov. 8, 1904	C 49	Webber, Chas.	Sept. 13, 1904	C 32
*John, Evan	July 25, 1916	C 140	Webber, Charles F.	Sept. 13, 1904	C 33
Johnson, Geo.	May 9, 1904	C 124	Whiting, Geo.	May 29, 1905	C 117
Johnson, Wm. R.	Mar. 1, 1905	C 75	Wilson, Austin	Feb. 7. 1905	C 67
Jones, Evan	April 30, 1913	C 136	Wilson, Thos.	April 27, 1904	C 11
Lander, Frank	Jan. 9, 1905	C 61	Woodburn, Moses	Mar. 29, 1905	C 83
Lanfear, Herbert	Jan. 27, 1905	C 63			

MINE SURVEYOR CERTIFICATES ISSUED UNDER THE "COAL-MINES REGULATION ACT AMENDMENT ACT, 1919."

Name.	Date.	No.	Name.	Date.	No.
Anderson, Harry C.	May 19, 1922	59	Lymn, Albert Crompton	Oct. 3, 1919	17
Baile, Wynne Jeffreys	Oct. 3, 1919	16	MacDonald, John	May 19, 1922	46
Bonar, Robert B.	Dec. 30, 1926	64	Miard, Harry Ernest	Oct. 3, 1919	2
Bowerman, Everard S.	Dec. 14, 1920	39	McCulloch, Robert	Oct. 3, 1919	6
Boyce, Joseph Patrick	Oct. 3, 1919	5	Owen, Wm. Arthur	Oct. 3, 1919	10
Caufield, Bernard	May 19, 1922	54	Priest, Elijah	May 19, 1922	53
Corbett, Garnett S.	May 19, 1922	49	Rafter, Wm.	May 19, 1922	51
Cox, Richard	May 19, 1922	57	Reger, Frederick Wm.	Oct. 3, 1919	7
Crosscombe, James S.	May 31, 1923	60	Richards, Chas. Clifton	Oct. 3, 1919	19
Daniell, Geo. W. B.	Oct. 3, 1919	29	Ridley, James	Oct. 3, 1919	18
Davis, Gerald D.	Oct. 3, 1919	28	Roaf, Jos. R.	Oct. 3, 1919	14
Delaney, James	Oct. 3, 1919	21	Richards, James A.	Oct. 3, 1919	15
Dickson, James	Oct. 3, 1919	3	Scott, Thos. Wright	Oct. 3, 1919	4
Devlin, Henry	May 19, 1922	44	Strachan, Robert	June 21, 1920	36
Drewry, Wm. Stewart	May 19, 1922	56	Spruston, Thos. A.	May 19, 1922	52
Freeman, Harry N.	May 19, 1922	49	Strachan, Robert	May 19, 1922	45
Garman, Maurice W.	Oct. 3, 1919	11	Sandland, Joseph	May 31, 1923	61
Gregory, P. W.	Nov. 17, 1919	32	Stewart, R. T.	Nov. 17, 1923	62
Graham, Charles	May 19, 1922	50	Townsend, Neville F.	Nov. 17, 1919	31
George, Frank J.	May 19, 1922	48	Vallance, Wm. Dixon	Oct. 3, 1919	8
Hargreaves, James	Nov. 29, 1920	33	Verkirk, Lucas	June 21, 1921	42
Hepburn, James T.	Dec. 14, 1920	37	Waddington, Geo. W.	June 21, 1920	35
Holdsworth, William	Oct. 3, 1919	9	Wark, Samuel David	Oct. 3, 1919	20
Hughes, Edward	Dec. 14. 1920	38	White, Harold	Oct. 3, 1919	25
Hunter, George	Oct. 3, 1919	30	Wilson, R. Robinson	Oct. 3, 1919	12
Howden, Archibald	May 19, 1922	55	Wilson, Arthur Rupert	Oct. 3, 1919	13
Jackson, Thos. R.	May 19, 1922	43	Wilson, Chas. Jas.	Oct. 3, 1919	22
King, Alfred Geo.	Oct. 3, 1919	27	Wilson, Hartley Paul	Oct. 3, 1919	24
Lancaster, Peter	Oct. 3, 1919	23	Wilton, Douglas D.	May 19, 1922	59
Lauderbach, Wilfrid P.	June 16, 1925	63	Wilkie, Octavius B. N.	Oct. 3, 1919	26
Lindoe, Luke	June 21, 1921	41	Wright, Austin	Dec. 14, 1920	40

LIST OF ACCIDENTS IN B.C. COLLIERIES, 1926.

(Reported as required by Section 71, "Coal-mines Regulation Act.")

VANCOUVER ISLAND, NICOLA-PRINCETON, AND NORTHERN INSPECTION DISTRICTS.

REPORTED BY HENRY DEVLIN, THOS. R. JACKSON, JAS. W. JEMSON, H. E. MIARD, J. G. BIGGS, AND T. J. SHENTON, INSPECTORS.

No. and Date.	Colliery.	Name.	Occupation.	Details.
1. Feb. 3	No. 1 mine (W.F.C.)	William H. Vater	Miner	Right tibia fractured when quantity of loose coal fell.
2. April 21	Ditto	James Salmon	Machine-man helper	Toes and middle of foot fractured when piece of coal fell.
3. „ 24	Ditto	Alexander Rowan	Rock foreman	Back of left thigh punctured when struck by flying debris from shot.
4. May 28	Ditto	John Hamilton	Fireboss	Back injured when piece of caprock fell.
5. July 26	Ditto	Ernest Bennett	Miner	Back fractured when piece of rock fell from a slip.
6. „ 30	Ditto	William Burt	Miner	Left rib fractured and left ankle bruised by piece of rock from roof.
7. Sept. 22	Ditto	John Nicholson	Motorman	Left arm fractured when jammed between motor and first car.
8. Oct. 14	Ditto	Joseph Salmon	Machine-runner	Right leg broken when coal-cutting machine swung around.
9. Nov. 25	Ditto	Wong Foy	Car-runner	Fracture of second lumbar vertebræ when slipping off car on to rail.
10. Dec. 24	Ditto	Horace Kingswood	Driver	Right hip-bone fractured when kicked by mule.
11. Feb. 4	Reserve (W.F.C.)	John W. Gray	Miner	Instantly killed by fall of coal.
12. „ 4	Ditto	William Paul	Miner	Right leg and ribs fractured by fall of top coal.
13. Mar. 5	Ditto	William Raines	Rope-rider	Compound fracture of left leg when jammed between car and timbers.
14. „ 30	Ditto	William English	Miner	Left shoulder dislocated and badly bruised when struck by falling timber.
15. June 2	Ditto	Robert Noble	Driver	Nose broken and face badly bruised when kicked by horse.
16. Aug. 4	Ditto	John Keaist	Rope-rider	Right elbow fractured when jumping off car when rope broke.
17. „ 19	Ditto	Glyn Lewis	Miner	Right leg broken when jammed between post and car.
18. „ 21	Ditto	Robert Wilson	Miner	Back fractured when piece of rock fell from roof.
19. „ 23	Ditto	William Foy	Miner	Instantly killed by fall of roof rock at face.
20. Sept. 16	Ditto	Thomas Sampson	Miner	Nose broken and fractured left ankle, caused when braces broke and he fell into car.
21. June 28	Wakesiah (W.F.C.)	John F. Webber	Fireboss	Left leg fractured when struck by car.
22. Jan. 6	No. 1, Well.-Extension (C.C. (D.), Ltd.)	William Allen	Miner	Right foot fractured when struck by piece of rock.
23. Oct. 15	Ditto	John Michek	Loader	Fractured spine when struck by stringer while riding up slope.

VANCOUVER ISLAND, NICOLA-PRINCETON, AND NORTHERN INSPECTION DISTRICTS
—*Continued.*

No. and Date.	Colliery.	Name.	Occupation.	Details.
24. April 5	No. 2, Well.-Extension (C.C. (D.), Ltd.)	George Simpson	Miner	Right leg broken when crushed between rock and post.
25. „ 21	Ditto	William Bowater	Miner	Middle finger of left hand crushed between stringer and brushing.
26. Nov. 17	Ditto	Dominic Montella	Miner	Left scapula and sixth rib fractured when piece of rock fell.
27. May 13	No. 6, Well.-Extension (C.C. (D.), Ltd.)	J. Tonkin	Miner	Small toe of right foot fractured when piece of cap-rock fell.
28. Dec 22	Ditto	James McDonald	Miner	Left first and third ribs fractured when struck by piece of cap-rock.
29. May 27	No.5, Well.-Extension (C.C. (D.), Ltd.)	August Van Larkin	Miner	Left ankle fractured when struck by piece of cap-rock.
30. July 26	Ditto	Tony Turk	Miner	Two fractured ribs when plank broke, causing him to fall.
31. Nov. 23	Ditto	Arthur Godfrey	Labourer	Left foot crushed when struck by large piece of rock.
32. April 16	No. 4, Comox (C.C. (D.), Ltd.)	Chas. Walker	Miner	Right leg broken when piece of rock fell from roof.
33. May 19	Ditto	Gee Yip	Miner	Leg broken when piece of cap-rock fell.
34. „ 22	Ditto	How Tai	Driver	Instantly killed when struck by derailed car.
35. Oct. 28	Ditto	Wong Bill	Miner's helper	Right leg broken when struck by piece of rock.
36. Nov. 25	Ditto	Joseph Bardesona	Timberman	Right arm and leg broken when top coal fell.
37. Jan. 25	No. 1 mine (Granby C.M.S. & P. Co.)	Charles Dowling	Miner	Fractured left leg when struck by car.
38. Feb. 22	Ditto	Alex. Aigner	Rope-rider	Right leg fractured by slipping in front of car.
39. Mar. 25	Ditto	David Alton	Miner	Instantly killed by blow-out of gas and coal.
40. April 6	Ditto	Bert Conti	Miner	Instantly killed by blow-out of gas and coal.
41. „ 6	Ditto	Frank Sundberg	Miner	Instantly killed by blow-out of gas and coal.
42. June 12	Ditto	John Dean	Fireboss	Left foot crushed by car.
43. Aug. 12	Ditto	David Morris	Miner	Crushed pelvis when jammed between post and car.
44. Sept. 13	Ditto	Thos. C. Wales	Rope-rider	Instantly killed when car ran over him.
45. Nov. 10	No. 1 mine (East Well. Coal Co., Ltd.)	George Edgar	Miner	Instantly killed when struck by falling rock.
46. Feb. 11	King & Foster Coal Co.	Henry Shepherd	Miner	Severely bruised and cut when plank broke.
47. „ 11	Ditto	Robert Pringle	Carpenter	Collar-bone, ribs, and pelvis fracture when plank broke.
48. „ 25	No. 3 mine (Coalmont Col., Ltd.)	K. Prokoff	Miner	Left ankle fractured when struck by piece of coal.
49. Jan. 28	No. 4 mine (Coalmont Col., Ltd.)	Fred Gilderdale	Driver	Left foot fractured when struck by piece of lagging.
50. July 5	Ditto	E. Hunter	Miner	Fractured pelvis when jammed between post and car.

EAST KOOTENAY INSPECTION DISTRICT.

REPORTED BY ROBERT STRACHAN AND JOHN MACDONALD, INSPECTORS.

No. and Date.	Colliery.	Name.	Occupation.	Details.
51. July 15	No. 1 East, C.C. (C.N.P.C. Co.)	Nick Tonick	Rope-rider	Instantly killed by cave.
52. Oct. 23	Ditto	I. Steele	Miner	Injured by fall of coal.
53. „ 23	Ditto	W. Cockburn	Miner	Head, breast, and ribs injured by fall of coal.
54. Mar. 22	No. 2 mine, C.C. (C.N.P.C. Co.)	Fred Slusar	Driver	Ribs fractured and badly bruised when run over by car.
55. June 4	No. 3, Michel (C.N.P.C. Co.)	A. Klemuk	Miner	Fractured thigh when large piece of rock fell from side.
56. July 17	Ditto	Joseph Burns	Rockman	Instantly killed by fall of coal.
57. Nov. 6	Ditto	H. Travis	Rope-rider	Arm broken when trampled on by horse.
58. Dec. 7	Tipple, Michel (C.N.P.C. Co.)	D. D'Andrea	Car-haul man	Ankle crushed when caught between chain and iron guide.
59. Oct. 15	Opposite office (Corbin Coals, Ltd.)	Thomas Collins	Teamster	Fractured right shoulder and right hip bruised by falling over box while trying to catch a runaway team.

LIST OF ACCIDENTS IN METALLIFEROUS MINES, 1926.

(Reported as required by Section 19, "Metalliferous Mines Regulation Act.")

NORTHERN, SOUTHERN COAST, AND VANCOUVER ISLAND INSPECTION DISTRICTS.

REPORTED BY THOS. J. SHENTON AND JAMES DICKSON, INSPECTORS.

No. and Date.	Colliery.	Name.	Occupation.	Details.
1. July 27	Nickel Plate (Hedley Gold Mining Co.)	Charles Giesecke	Mucker	Left leg crushed and both eyes lost when powder exploded.
2. Aug. 14	Stemwinder (Porcupine Goldfields Co.)	Ogilvie Robertson	Motorman's helper	Instantly killed when struck on head by crowbar.
3. June 4	Hidden Creek (Granby C.M.S. & P. Co.)	Ed. Carlson	Miner	Instantly killed when falling down chute.
4. Oct. 10	Ditto	Vagn Theisan	Miner pluggerman	Skull fractured when struck by flying rock from explosion. Fatal.
5. Feb. 10	Victoria (Britannia M. & S. Co., Ltd.)	R. E. Matthews	Shiftboss	Face, neck, and eyes injured by small pieces of rock from shot.
6. April 20	Ditto	J. B. McLean	Miner	Both eyes injured when shot went off.
7. May 3	Ditto	S. Urata	Labourer	Left leg fractured when struck by rolling timber.
8. Oct. 10	Ditto	J. Kelly	Electrician	Badly shocked and left hand burned by catching charged cable.
9. Feb. 9	Fairview (Britannia M. & S. Co., Ltd.)	B. J. Smiljanich	Miner	Instantly killed when falling down stope.
10. July 9	Ditto	Melick Boris	Mucker	Both eyes severely injured when bulldoze was dislodged by rock.

NORTHERN, SOUTHERN COAST, AND VANCOUVER ISLAND INSPECTION DISTRICTS —*Continued.*

No. and Date.	Colliery.	Name.	Occupation.	Details.
11. Sept. 22	Fairview (Britannia M. & S. Co., Ltd.)	D. Banich	Mucker	Ear-drums ruptured, eyes filled with small particles of rock, and leg bruised when shot exploded.
12. „ 22	Ditto	W. H. Smith	Miner	Similar accident to above.
13. Mar. 5	Tunnel Camp (Britannia M. & S. Co., Ltd.)	F. McDowell	Miner	Scalp-wound, bruised face and neck when shot exploded.
14. „ 5	Ditto	B. Gallagher	Mucker	Face bruised when shot exploded.
15. „ 5	Ditto	G. A. Robinson	Hoist mechanic	Scalp-wound when shot exploded.
16. „ 25	Barbara Camp (Britannia M. & S. Co., Ltd.)	K. Bjerkan	Trammer	Right arm bruised and scalp wounded when large rock fell.
17. Nov. 4	Britannia Beach (Britannia M. & S. Co., Ltd.)	Bruce Gilmore	Mucker	Right leg fractured and left ankle sprained when knocked down by skip.

EAST KOOTENAY AND WEST KOOTENAY AND BOUNDARY INSPECTION DISTRICTS.

Reported by Robert Strachan and H. H. Johnstone, Inspectors.

No. and Date.	Colliery.	Name.	Occupation.	Details.
18. Jan. 3	Sullivan (Cons. M. & S. Co., Ltd.)	A. Claussen	Electrician	Broken fibula of left leg, caused by stepping on rail.
19. Jan. 12	Ditto	David Clark	Timberman	Fractured left ribs and right shoulder dislocated by fall of rock.
20. Feb. 16	Ditto	John Petrucka	Machine operator	Left leg fractured when struck by piece of falling rock.
21. „ 25	Ditto	Charles Onofricius	Miner	Toes on right foot fractured when crushed by rock.
22. Mar. 18	Ditto	J. Mule	Mucker	Left leg fractured when struck by piece of rock.
23. April 26	Ditto	A. A. Martinen	Mucker	Left side of pelvis fractured when jammed between timber and car.
24. May 28	Ditto	L. Benvenutti	Mucker	Right shoulder fractured by falling from ladder.
25. Oct. 4	Ditto	C. Pontoni	Miner	Skull fractured when falling down grizzly. Fatal.
26. Dec. 11	Molly Claims (Cons. M. & S. Co., Ltd.)	Reginald Rushton	Miner	Body badly bruised when detonators exploded.
27. June 12	Carnation (Victoria Syndicate, Ltd.)	Jacob Hansen	Miner	Skull fractured and neck broken when large rock fell. Fatal.
28. Oct. 26	Rambler (Lawrence & Renta, Lessees)	Arne Palojarve	Mucker	Instantly killed when struck by large rock.
29. Mar. 11	Beaverdell (Wells Syndicate, Ltd.)	Allan J. Morrison	Miner	Hips and abdomen badly bruised by large piece of rock.
30. April 19	Copper Mountain (Allenby Copper Co.)	Thomas Kelling	Nipper	Right arm broken and body badly bruised when shot exploded.
31. Aug. 10	Ditto	Max Potkoryok	Barman	Instantly killed when falling down glory-hole into chute.
32. June 21	Pioneer (David Sloan, Lessee)	Peter Hagberg	Miner	Fatally injured when bucket of muck fell on him.

PROSECUTIONS UNDER "COAL-MINES REGULATION ACT."

Mine and Date.	Name and Occupation.	Offence charged.	Judgment.
Crow's Nest Pass Coal Co., Ltd.—			
Michel mines, July 21	M. Galla	Breach of Special Rule 115 (defective timbering)	$10 and costs.
Michel mines, July 21	D. Martinilla	Ditto	$10 and costs.
Michel mines, July 23	W. Dootson	Ditto	$15 and costs.
Michel mines, July 23	M. Komar	Ditto	$15 and costs.
Michel mines, Aug. 17	P. Mikolenuk	Ditto	$10 and costs.
Michel mines, Aug. 17	J. Mikolenuk	Ditto	$10 and costs.
Coal Creek mines	T. Strong	Breach of Special Rule 110	$1 and costs.
Western Fuel Corp. of Canada—			
Reserve mine, Aug.	Richard Rallison, fireboss	Failure to withdraw men from place that was insufficiently timbered	$5 and costs.
Reserve mine, Aug.	David Scott, miner	Failure to securely timber place or withdraw	Case dismissed.
Canadian Collieries (D.), Ltd.—			
No. 4 Comox mine, Aug. 20	Kor Pong	Had matches and tobacco in his possession	$25 and costs.
East Wellington Coal Co., Ltd.—			
No. 1 mine, April 1	Alex. Hamilton, miner	Explosives left in mine	$10 and costs.
No. 1 mine, April 1	William Lektnen, miner	Explosives left in mine	$10 and costs.
No. 1 mine, April 1	Joseph Jenkinson, miner	Explosives left in mine	$10 and costs.
No. 1 mine, April 1	George Stafford, miner	Explosives left in mine	$10 and costs.
No. 1 mine, April 1	John Polberg, miner	Explosives left in mine	$10 and costs.
No. 1 mine, April 1	John Wilson, miner	Explosives left in mine	$10 and costs.
No. 1 mine, April 1	Alex. Logan, miner	Explosives left in mine	$10 and costs.

METALLIFEROUS MINES SHIPPING IN 1926.

NORTH-WESTERN DISTRICT (No. 1).

ATLIN MINING DIVISION.

Mine or Group.	Locality.	Owner or Agent.	Address.	Character of Ore.
Cherokee	Atlin	Atlin Silver-Lead Mines, Ltd	Atlin	Silver, gold, lead.
Engineer	Atlin	Engineer Gold Mines, Ltd	Engineer	Gold, silver.

SKEENA MINING DIVISION.

Belmont-Surf Inlet	Surf inlet	Belmont-Surf Inlet Mines, Ltd	Surf Inlet	Gold, silver, copper.
Golden Nib	Thornhill	O. P. Brown	Terrace	Gold, silver, copper.
Paisley Point	Hartley Bay	Paisley Point Mines, Ltd	1416 Dominion Bank Bldg., Vancouver	Silver, gold, copper.
Trixie (Patterson)	Porcher island	Frank Patterson	Refuge Bay	Gold, silver.

NASS RIVER MINING DIVISION.

Esperanza	Kitsault river	P. Gordon	Box 238, Anyox	Silver, gold, lead.
Goiskeish	Anyox	Granby Cons. M. S. & P. Co	Anyox	Gold, silver.
Hidden Creek	Anyox	Granby Cons. M. S. & P. Co	Anyox	Silver, copper, gold.
La Rose	Kitsault river	Alice Arm-La Rose Mining Co	Box 203, Pr. Rupert.	Silver, gold, lead.

PORTLAND CANAL MINING DIVISION.

B.C. Silver	Salmon river	B.C. Silver Mines, Ltd	Premier	Silver, gold.
Dunwell	Glacier creek	Dunwell Mines, Ltd	Stewart	Silver, gold, lead, zinc.
I.X.L.	Glacier creek	L. & L. Consolidated Mines, Ltd	Stewart	Silver, gold, lead.
Outland-Silver Bar	Salmon River glacier	Outland Silver Bar Mines, Ltd	Seattle, Wash.	Silver, lead.
Outsider	Portland canal	Granby Cons. M. S. & P. Co	Anyox	Copper, gold.
Porter-Idaho	Glacier creek	Porter-Idaho Mining Co.	Stewart	Silver, lead, gold.
Prosperity	Portland canal	F. R. Jancowski	Stewart	Silver, lead, gold.
Premier	Cascade river	Premier Gold Mines, Ltd.	Premier	Silver, gold, lead.

NORTH-EASTERN DISTRICT (No. 2).

OMINECA MINING DIVISION.

Fiddler	Dorreen	J. Tredway	Dorreen	Silver, gold, lead.
Hazelton View	Rocher Déboulé mount.	New Hazelton Gold Cobalt Mines, Ltd.	New Hazelton	Silver, gold.
Henderson	Hudson Bay mountain	Duthie Mines, Ltd	Smithers	Silver, lead, gold.
Seel	Wisteria	Seel, Geo	Wisteria	Silver, lead.
Silver Cup	Nine-mile mountain	L. W. Patmore	Prince Rupert	Silver, lead.

CENTRAL DISTRICT (No. 3).

LILLOOET MINING DIVISION.

Pioneer	Cadwallader creek	David Sloan	Shalalth	Gold.

NICOLA MINING DIVISION.

Aberdeen	10 miles from Coyle	Merritt Mines, Ltd	Standard Bank Bldg., Vancouver	Copper, silver.
Almeda	Nicola	O. A. Schmidt	Nicola	Silver, lead.
Planet	Stump lake	Planet Mines & Red. Co. of Nicola, Ltd.	522 Standard Bank Bldg., Vancouver	Silver, gold, lead.
Thelma	Merritt	F. W. Humble & Co.	914 Granville St., Vancouver	Silver, lead.

YALE MINING DIVISION.

Emancipation	Jessica	Director Gold Mining Co	P.O. Box 149, Hope.	Gold, silver.

CENTRAL DISTRICT (No. 3)—*Continued.*

VERNON MINING DIVISION.

Mine or Group.	Locality.	Owner or Agent.	Address.	Character of Ore.
Kelly	West Summerland	J. W. S. Logie	West Summerland	Silver, lead.

KAMLOOPS MINING DIVISION.

Homestake	Adams lake	W. L. Bell	Box 341, Kamloops	Gold, silver, zinc, lead.
Rhode Island	Adams lake	J. A. Dowding	Kamloops	Silver, gold, lead.
Smuggler	Birch island	Smuggler Hill Dev. Co., Ltd.	215 Third Ave., Kamloops	Silver, lead.

SOUTHERN DISTRICT (No. 4).

GREENWOOD MINING DIVISION.

Ames Company	Rock creek	Ames Co	Grand Forks	Silver, gold, lead.
Beaver	Beaverdell	Beaver Silver Mines, Ltd.	Victoria	Silver, lead.
Bell	Beaverdell	McIntosh & Lee	Beaverdell	Silver, lead, gold.
Bounty	Beaverdell	S. B. Davis	Beaverdell	Silver, lead.
Brooklyn	Phoenix	R. Forshaw	Greenwood	Copper, silver, gold.
Crescent	Greenwood	J. H. Duhamel	Greenwood	Silver, lead, gold.
D.A.	Greenwood	D.A. Mines, Ltd.	Greenwood	Silver, lead.
Elkhorn Fraction	Greenwood	Elkhorn Mines, Ltd.	Victoria	Silver, lead, gold.
Enterprise	Paulson	E. Terzick	Paulson	Silver, gold.
Greenwood Smelter	Greenwood	W. J. Clark	Greenwood	Copper, silver, gold.
Gold Drop	Greenwood	Louis Bosshart	Greenwood	Silver, gold, lead.
Imperial	Rock creek	W. J. Clark	Greenwood	Silver, gold, lead, zinc.
Jewel	Eholt	Manager	Eholt	Silver, gold.
Lizard Creek				Silver, lead.
Penticton Mng. Co.	Beaverdell	Penticton Mining Co	Penticton	Silver, lead.
Providence	Greenwood	W. J. Clark	Greenwood	Silver, gold, lead.
Revenge	Beaverdell	Beaver Silver Mines, Ltd.	Victoria	Silver, lead.
Sally	Beaverdell	Sally Mines, Ltd.	Penticton	Silver, lead.
Wellington	Beaverdell	The Wellington Syndicate	Greenwood	Silver, lead, gold.

GRAND FORKS MINING DIVISION.

Yankee Girl	Ymir	Yankee Girl, Ltd.	Ymir	Gold, silver.

OSOYOOS MINING DIVISION.

Horn Silver	Similkameen	Horn Silver Mining Corp., Ltd.	Bank of Toronto Bldg., Vancouver	Gold, silver.
Nickel Plate	Hedley	Hedley Gold Mining Co.	Hedley	Gold, silver, arsenic.
Silver Star	Similkameen	Fred Bowden	Similkameen	Silver, gold.
Summit	Salmo	Imperial Bank	Nelson	Gold, silver.

SIMILKAMEEN MINING DIVISION.

Copper Mountain	Allenby	Granby Cons. M. S. & P. Co.	Allenby	Copper, silver, gold.
Eureka	Summit camp	Lynden Mining Syndicate	Tulameen	Silver, zinc, lead.
Renfrew	Siwash creek	Lade Bros. & J. Otto	J. B. Otto, 501 Gorge Rd., Victoria	Silver, lead, gold.

EASTERN DISTRICT (No. 5).

WINDERMERE MINING DIVISION.

Daisy		Alfred M. Larrabee	Wilmer	Silver, lead.
Key	Toby creek	W. A. Drayton	Fort Steele	Silver, lead, zinc.
Lead Queen	Frances creek	Lead Queen Mine	Brisco	Silver, lead.
Paradise	Windermere	R. Randolph Bruce	W. H. Cleland, Invermere	Silver, lead.
Silver Spray and Hot Punch	North fork, Toby creek	Silver Spray Mining Co.	Dominion Bank Bldg., Vancouver	Silver, lead.
Star	North fork, Toby creek	J. E. Stoddart	Windermere	Silver, lead.
White Cat	Slade creek	Galena Ghat Mines, Ltd.	J. C. Pitts	Silver, lead.

EASTERN DISTRICT (No. 5)—*Continued.*

FORT STEELE MINING DIVISION.

Mine or Group.	Locality.	Owner or Agent.	Address.	Character of Ore.
Aurora	Moyie lake	Aurora Syndicate	A. H. Smith, Box 42, Moyie	Silver, zinc, lead.
Comet	Galloway	J. D. Simmons	Box 406, Elko	Silver, copper.
Stemwinder	Mark creek	E. P. Crawford	Kimberley	Silver, gold, zinc, lead.
St. Eugene	Moyie	Consolidated M. & S. Co.	Moyie	Silver, gold, zinc, lead.
Sullivan	Kimberley	Consolidated M. & S. Co.	Kimberley	Silver, lead, zinc.

AINSWORTH MINING DIVISION.

Bluebell	Riondel	Blue Bell Mine	S. S. Fowler, Riondel	Silver, lead, zinc.
Charleston	Zincton	Charleston Mining Co.	A. J. Harris, Zincton	Silver, zinc.
Cork-Province	Keen creek	Cork-Province Mines	W. H. Burgess, Kaslo	Silver, gold, zinc, lead.
Daybreak	Zwicky	Daybreak Mining Co	J. C. Roberts, Wilcox Bldg., Portland	Silver, lead.
Jeanette	Ainsworth	Manager	Ainsworth	Silver, lead.
Lake Shore	Ainsworth	Lakeshore Mining Co.	E. J. Edwards, Ainsworth	Silver, lead.
Metals Recovery	Kaslo creek	Metals Recovery, Ltd.	M. S. Davys, Kaslo	Silver, zinc, lead.
Rainbow	Ainsworth	Wm. Anderson	Kaslo	Silver, lead.
Silver Hill	Crawford bay	W. J. Williams	1003 Water St., Nelson	Silver, lead.
Silver Hoard	Cedar creek	Delhi Mining Co.	H. Giegerich, Kaslo.	Silver, zinc, lead.
Spokane-Trinket	Ainsworth	McPherson & Bridges	Ainsworth	Silver, lead.
Surprise	Ainsworth	Howser Mining Co.	R. K Waite, Nelson.	Silver.
Tariff	Ainsworth	C. E. Harmon	Box 552, Ainsworth.	Silver, lead, zinc.
Whitewater	Whitewater	Whitewater Mines, Ltd.	W. H. Burgess, Kaslo	Gold, silver, zinc, lead.

SLOCAN MINING DIVISION.

Alamo	Alamo	Cunningham Mines, Ltd.	Alamo	Gold, silver, zinc, lead.
Alpha	Silverton	Manager	Silverton	Silver, lead.
Black Coalt	Sandon	G. A. Petty	Sandon	Silver, lead, zinc.
Bosun	Sandon	Rosebery-Surprise Mining Co.	New Denver	Gold, silver, lead, zinc.
Canadian	Silverton creek	Ontario & Slocan Mining Co.	J. M. Brandon, Silverton	Silver, lead.
Carnation	Sandon	Victoria Syndicate	Sandon	Gold, silver, lead.
Colonial	Sandon	H. E. Singel	Box 153, Sandon	Silver, lead.
Dora	Three Forks	Manager	Three Forks	Silver, lead.
Dougherty	Sandon	A. T. Garland	Kaslo	Silver, lead.
Echo	Silverton	L. J. McAtee	27 E. Boone Ave., Spokane	Gold, silver, lead.
Galena Farm	Silverton	Galena Mining and Milling Co.	Clark Bros., Old Nat. Bank, Spokane	Silver, zinc, lead.
Hewitt	Silverton	Victoria Syndicate	Silverton	Silver, zinc, lead.
Lucky Jim	Zincton	Lucky Jim Lead and Zinc Mining Co.	Zincton	Silver, zinc, lead.
Mammoth	Silverton	Porcupine Gold Fields Co.	Silverton	Silver, zinc, lead.
Metallic	Silverton	Robert McFarlane	Silverton	Silver, zinc, lead.
Mollie Hughes	New Denver	Bigelow Bay Mining Co.	New Denver	Gold, silver, lead.
Monitor	Three Forks	Rosebery-Surprise Mining Co.	New Denver	Gold, silver, zinc, lead.
Mountain Chief	Alamo	John Cechelero	New Denver	Silver, lead, zinc.
McAllister	Three Forks	Slocan Silver Mines, Ltd.	Sandon	Silver.
Noble Five	Cody	Paul Lincoln	Sandon	Silver, lead, zinc.
Queen Bess	Alamo	Cunningham Mines, Ltd.	Sandon	Gold, silver, lead.
Rambler-Cariboo	Rambler	Rambler-Cariboo Mines, Ltd.	Box 443, New Denver	Gold, silver, lead.
Richmond-Eureka	Sandon	Cunningham Mines, Ltd.	Sandon	Gold, silver, lead.
Ruth-Hope	Sandon	Ruth-Hope Mines, Ltd.	Sandon	Gold, silver, lead, zinc.
Silversmith	Sandon	Silversmith Mines, Ltd	Sandon	Silver, lead, zinc.
Sovereign	Sandon	Cunningham Mines, Ltd.	Sandon	Silver, lead.
Standard	Silverton	Standard Silver Lead Co.	Silverton	Silver, zinc, lead.
Surprise	Sandon	Rosebery-Surprise Mining Co.	New Denver	Silver, lead, zinc.
Trade Dollar	Sandon	Einar Granling	Box 59, Sandon	Silver, lead, zinc.
Van Roi	Silverton	Cunningham Mines, Ltd.	Sandon	Gold, silver, lead, zinc.
Victor	Three Forks	G. A. Petty	Sandon	Gold, silver, lead.
Wonderful	Sandon	Cunningham Mines, Ltd.	Sandon	Gold, silver, zinc, lead.

SLOCAN CITY MINING DIVISION.

Enterprise	Enterprise creek	P. McGuire	Slocan	Gold, silver, zinc, lead.
Ottawa	Springer creek	P. McGuire	Slocan	Silver.

EASTERN DISTRICT (No. 5)—*Continued.*

NELSON MINING DIVISION.

Mine or Group.	Locality.	Owner or Agent.	Address.	Character of Ore.
Alice	Creston	Guy Constable	Creston	Gold, silver, lead.
Blue Bird	Deer Park	Paul Knabe	Deer Park	Silver, lead.
Boulder City	Salmo	L. H. Clubine	Salmo	Gold, silver.
Goodenough	Ymir	A. McDonald	Ymir	Gold, silver, lead.
Granite	Taghum	W. W. Philbrick	319 Kuhn Bldg., Spokane	Gold, silver, lead.
Molly Gibson	Kitto Landing	A. Bruce Ritchie	Trail	Silver, lead.
Porcupine	Ymir	R. K. Waite	Ymir	Gold, silver, lead.
Queen	Salmo	W. B. deWitt	Salmo	Gold, silver.
Queen Victoria	Taghum	Oscar Schaer	Taghum	Gold, silver, copper.
Silver Reef	Anderson creek	R. K. Waite	Ymir	Gold, silver, lead.
Starkey	Nelson	F. A. Starkey	Nelson	Silver, lead.
Yankee Girl	Ymir	Yankee Girl, Ltd	Ymir	Gold, silver, zinc, lead.

TRAIL CREEK MINING DIVISION.

Centre Star, etc	Rossland	Consolidated M. & S. Co	Trail	Gold, silver, copper.
I.X.L.	Rossland	R. B. Shellady	Rossland	Gold, silver.
Velvet	Rossland	J. W. Gregory	Box 421, Rossland	Gold, copper, silver.

LARDEAU MINING DIVISION.

Multiplex	Camborne	O. T. Bibb	Revelstoke	Gold, silver, lead, zinc.

REVELSTOKE MINING DIVISION.

Mastodon	Revelstoke	Green Bros. & Burdon	Nelson	Silver, lead.

WESTERN DISTRICT (No. 6).

VANCOUVER MINING DIVISION.

Britannia	Britannia Beach	Britannia M. & S. Co	Britannia Beach	Gold, silver, copper.

NEW WESTMINSTER MINING DIVISION.

Silver Chief	Chilliwack	Silver Chief Mining Co	Chilliwack	Silver, copper.

LIST OF CROWN-GRANTED MINERAL CLAIMS.

CROWN GRANTS ISSUED IN 1926.

NORTH-WESTERN DISTRICT (No. 1).

Claim.	Mining Division.	Grantee.	Lot.	Acres.	Date.
Big Canyon	Atlin	John Molloy	4660	29.43	Nov. 23
Big Canyon No. 2	"	Ellen Molloy	4661	51.61	Nov. 23
Blacksmith	"	Peter Gabrio	4633	39.62	Nov. 23
Mineral Hill No. 1	Skeena	William J. Goodwin	6811R.5	51.65	Aug. 27
Mineral Hill No. 2	"	Charles E. Moore	6812R.5	49.05	Aug. 27
Mineral Hill No. 3	"	"	6813R.5	49.69	Aug. 27
Sight	"	Swan Dalin	6820R.5	49.86	July 6
Summit	"	Charles E. Moore	6814R.5	51.60	Aug. 27
Cape Nome	Nass River	Sid Miller	939	51.65	Jan. 27
Hill Billy	"	Angus Beaton, George Rattray, Allan F. Crow, Charles Morrow, Wm. MacIver, Alexander G. Murray, John McCallum, Alex. McDonald, Lanchy McKay, Joseph D. McIsaac, Athol L. Ployart, Frank Stringham, John Smith, and Paul Stievenard	4263	42.71	Feb. 8
Hill Billy No. 2	"	Ditto	4264	47.68	Feb. 8
Mutt & Jeff Fraction	"	"	4265	50.71	Feb. 8
Royal No. 1	"	Jack Miller	1080	6.00	July 5
Royal No. 2	"	"	1081	25.02	July 5
Royal No. 3	"	"	1082	38.45	July 5
Royal No. 4	"	"	1083	29.27	July 5
Royal No. 5	"	"	1084	5.71	July 5
Royal No. 7	"	"	1085	22.15	July 5
Royal No. 8	"	"	1086	32.45	July 5
Silverado Fraction	"	Angus Beaton, George Rattray, *et al*	4266	34.55	Feb. 8
Ariel	Portland Canal	Silverado Mines, Ltd.	4513	51.65	June 8
Baby Rufus Fraction	"	Rufus Silver Lead Mines, Ltd.	3793	39.29	Dec. 20
Banana Fraction	"	Outland Silver Bar Mines, Ltd.	4601	3.56	June 11
Bar Silver	"	" "	4193	22.45	June 11
Canyon	"	Silverado Mines, Ltd.	4524	40.29	June 8
Climax	"	" "	4509	36.77	June 8
Contact Fraction	"	" "	4525	45.84	June 8
Duck Fraction	"	Charles Bertram Flewin	938	29.34	Dec. 22
Forrest	"	Prince John Mining Co.	4398	14.28	April 19
Forrest No. 2	"	" "	4399	50.83	April 19
Forrest Wedge Frac.	"	" "	4404	1.84	April 19
Fortune	"	Silverado Mines, Ltd.	4512	51.65	June 8
Glacier Fraction	"	" "	4515	46.11	June 8
Glenearn	"	" "	4510	34.00	June 8
High Grade	"	Edward Henry Fernald, Jessie Kilpatrick Jamieson, Angus Laughlin McDonald, and William McGraw	4605	42.45	Nov. 6
High Grade No. 1	"	Ditto	4604	23.45	Nov. 6
High Grade No. 2	"	"	4603	39.31	Nov 6
Ida O.	"	Outland Silver Bar Mines, Ltd.	4602	45.17	June 11
Iron Hill	"	Silverado Mines, Ltd.	4508	22.34	June 8
Jim Fraction	"	Prince John Mining Co.	4403	28.32	April 19
Lens	"	Outland Silver Bar Mines, Ltd.	3624	5.45	June 11
Long Fraction	"	Rufus Silver Lead Mines, Ltd.	4556	36.59	Dec. 20
Mons	"	Outland Silver Bar Mines, Ltd.	3625	38.88	June 11
Murdock Fraction	"	John Arthur Murdock, Duncan Douglas Murdock, John Murdock Mercer, Antoine Winfred Vassar, George McHugo, and James Edward Douville	3446	38.52	Nov. 5
Murdock Group No. 1	"	Ditto	3440	40.46	Nov. 5
Murdock Group No. 2	"	"	3441	32.24	Nov. 5
Murdock Group No. 3	"	"	3442	42.66	Nov. 5
Murdock No. 8	"	"	3443	47.89	Nov. 5
Murdock No. 9	"	"	3444	46.55	Nov. 5
Murdock No. 10	"	"	3445	51.65	Nov. 5
P.J. No. 10 Fraction	"	Prince John Mining Co.	4405	0.59	April 19
Prince John No. 1	"	" "	4387	35.07	April 19
Prince John No. 2	"	" "	4388	40.24	April 19
Prince John No. 3	"	" "	4389	42.44	April 19
Prince John No. 4	"	" "	4390	48.81	April 19
Prince John No. 5	"	" "	4391	43.74	April 19
Prince John No. 6	"	" "	4392	32.16	April 19
Prince John No. 7	"	" "	4393	20.35	April 19
Prince John No. 8	"	" "	4394	46.32	April 19
Prince John No. 9	"	" "	4395	45.25	April 19
Prince John No. 10	"	" "	4400	42.14	April 19
Rainier Fractional	"	Silverado Mines, Ltd.	4511	45.93	June 8
Red Bluff	"	Prince John Mining Co.	4396	38.84	April 19
Red Bluff No. 2	"	" "	4397	36.83	April 19
Red Bluff No. 3	"	" "	4401	43.02	April 19
Renown	"	Silverado Mines, Ltd.	4507	22.58	June 8
Rufus	"	Rufus Silver Lead Mines, Ltd.	3786	40.51	Dec. 20
Rufus No. 1	"	" "	3787	50.64	Dec. 20
Rufus No. 2	"	" "	3788	47.55	Dec. 20

NORTH-WESTERN DISTRICT (No. 1)—*Continued.*

Claim.	Mining Division.	Grantee.	Lot.	Acres.	Date.
Rufus No. 3	Portland Canal.	Rufus Silver Lead Mines, Ltd.	3789	46.07	Dec. 20
Rufus No. 4	"	" "	3290	51.65	Dec. 20
Rufus No. 5	"	" "	3791	47.11	Dec. 20
Rufus No. 6	"	" "	3792	37.54	Dec. 20
Silverado Fraction	"	Silverado Mines, Ltd.	4522	5.30	June 8
Silverado No. 3	"	" "	4520	45.30	June 8
Silverado No. 4	"	" "	4521	50.63	June 8
Silverado No. 4 Fraction	"	" "	4523	33.88	June 8
Silver Bars	"	Outland Silver Bar Mines, Ltd.	4191	19.77	June 11
Silver Bell No. 4	"	Silverado Mines, Ltd.	4517	49.92	June 8
Silver Bow No. 1	"	" "	4518	51.65	June 8
Silver Bow No. 2	"	" "	4516	51.65	June 8
Silver Bow No. 3 Fraction	"	" "	4514	47.71	June 8
Silver Fraction	"	Rufus Silver Lead Mines, Ltd.	4555	48.36	Dec. 20
Slide Fraction	"	" "	4553	3.15	Dec. 20
Spokane	"	Hugh Crawford Magee and Robert McKechnie	4436	42.63	Mar. 5
Sunshine	"	Alfred Edward Young and Jacob Philip Hawkinson	4499	44.07	Mar. 5
Sunshine No. 1	"	" " " "	4500	39.12	Mar. 5
Sunshine No. 2	"	" " " "	4504	50.31	Mar. 5
Sunshine No. 4	"	Alfred Edward Young	4505	29.23	Mar. 5
Tenas Fraction	"	Prince John Mining Co.	4402	0.22	April 19
Tiger	"	Harold Morrison and Wellington Beaton	4152	10.95	Nov. 5
Tram Fraction	"	Silverado Mines, Ltd.	4519	21.55	June 8
Vandal Fraction	"	Frederick Charles Winkler	3785	6.34	Feb. 10
Vimy No. 1	"	Outland Silver Bar Mines, Ltd.	3623	8.09	June 11
Wide Fraction	"	Rufus Silver Lead Mines, Ltd.	4554	33.81	Dec. 20

NORTH-EASTERN DISTRICT (No. 2).

None.

CENTRAL DISTRICT (No. 3).

Golden King	Lillooet	Herbert Howard Shandley	587 G. 1	45.44	Nov. 18
Lorne	"	" "	588 G. 1	50.25	Nov. 18
Marquis	"	" "	586 G. 1	24.50	Nov. 18
Telephone	"	" "	670 G. 1	28.70	Nov. 18
Woodchuck	"	" "	579 G. 1	38.20	Nov. 18
Wood Duck	"	" "	671 G. 1	24.58	Nov. 18
Belfast	Kamloops	Windpass Gold Mining Co.	3980	26.23	Mar. 5
Brenda Fraction	"	" "	3977	22.18	Mar. 5
Dolly Varden	"	" "	3975	33.93	Mar. 5
Donegal	"	" "	3979	24.16	Mar. 5
Elise	"	" "	3972	42.58	Mar. 5
Erin	"	" "	3974	8.19	Mar. 5
Gott	"	" "	3842	26.44	Mar. 5
Jupiter	"	" "	3971	33.93	Mar. 5
Maple Leaf	"	" "	3976	36.81	Mar. 5
North Dunn	"	" "	3843	20.90	Mar. 5
Premier	"	" "	3973	34.23	Mar. 5
Signe	"	" "	3978	33.28	Mar. 5
Sweet Home	"	" "	3844	39.03	Mar. 5
Windpass No. 1	"	" "	3839	42.22	Mar. 5
Windpass No. 2	"	" "	3840	35.09	Mar. 5
Windpass No. 3	"	" "	3841	26.10	Mar. 5

SOUTHERN DISTRICT (No. 4).

Black Diamond	Greenwood	Joseph P. Kelly	2275	37.50	Mar. 20
E.P.U. Fraction	"	George A. Jackson	3254	3.44	Sept. 28
E Pluribus Unum	"	Henry P. Jackson	3253	42.00	Sept. 28
Jo Dandy	"	Arthur Mellor	2120	51.21	Nov. 23
Lancashire Fraction	"	Henry P. Jackson	3255	8.23	Sept. 28
Montezuma	"	Walter Forshaw	915	45.00	May 17
New York	"	Robert Forshaw	901	47.65	May 21
Old England	"	Henry James Uptigrove	658	51.30	May 7
Richelieu	"	Eugene Saunier	942	51.65	Feb. 12
Standard	"	Walter Forshaw	982	7.98	May 17
Stemwinder	"	Agnes Forshaw	588	13.87	May 17
St. Louis	"	Frank Lant Neilson	2855	41.92	July 6
Athelstan	Grand Forks	Robert Denzler	1065	18.85	Dec. 29
Blue Bell	"	Malcolm Morrison	2136	48.40	Oct. 16
British	"	Gertrude Shobe Armstrong	3064s	31.24	Aug. 26
Cannon Ball	"	John William Spaulding	1036 G. 1	51.65	May 17
Evening Star	"	Edwin Dixon Carder	1321s	42.79	June 25
Humming Bird	"	Carl Anderson	1369	33.93	July 12
Humming Bird Fraction	"	Carl Adolph Anderson	1249	25.12	Sept. 28
Jasper Fraction	"	William Wilson	3029s	28.18	Jan. 7
Lucky Jim Fractional	"	James Anderson O'Reilly	4639	43.33	Oct. 28
Meadow Lark	"	James Cordy	1712	51.00	May 7

SOUTHERN DISTRICT (No. 4)—*Continued.*

Claim.	Mining Division.	Grantee.	Lot.	Acres.	Date.
Neta	Grand Forks	Richard James Gardner	996	50.59	May 21
Rio	"	Frank Lant Neilson	4418	35.33	July 6
Strawberry	"	Stanley Thomas Hull and George John Mattocks	1765	51.65	Dec. 29
Acacia	Osoyoos	Charles F. Law	6948	43.35	Oct. 29
Acadia	"	"	6958	51.65	Oct. 29
Alpha	"	John D. Bell	6918	51.65	Oct. 29
Australian	"	John H. Redden	6908	51.65	Oct. 29
Orphan	"	Clement Vacher	1106	44.16	July 6
Utopia	"	John H. Redden	6928	43.36	Oct. 29

EASTERN DISTRICT (No. 5).

Atlanta	Golden	Henry Robertson Moodie	134	19.46	June 16
Horse Shoe	"	" "	266 G. 1	20.61	June 16
Broken Hill	Windermere	R. S. Gallop and Wm. Heap-Holland	9992	47.41	Mar. 5
Butler	"	" "	9989	47.22	Mar. 5
Copper King	"	" "	9988	46.13	Mar. 5
Imperial	"	" "	9993	38.43	Mar. 5
Iron Mask	"	" "	9991	49.62	Mar. 5
North Light	"	" "	9994	32.65	Mar. 5
Master	"	" "	9990	42.64	Mar. 5
White Bear	"	" "	9987	49.74	Mar. 5
Alpha No. 1	Fort Steele	Russell Howard Bennett	13400	51.65	Aug. 17
Angus	"	Consolidated M. & S. Co	13346	51.65	Nov. 25
Beta No. 1	"	Russell Howard Bennett	13419	51.65	Aug. 18
Bush	"	Consolidated M. & S. Co	13295	51.65	Nov. 25
Bute No. 1	"	Russell Howard Bennett	13415	51.65	Aug. 18
Bute No. 2	"	" "	13414	51.57	Aug. 18
Bute No. 3	"	" "	13416	51.65	Aug. 18
Bute No. 4	"	" "	13413	51.57	Aug. 17
Bute No. 5	"	" "	13417	51.65	Aug. 18
Bute No. 6	"	" "	13412	51.57	Aug. 17
Bute No. 7	"	" "	13418	51.65	Aug. 18
Bute No. 8	"	" "	13411	51.57	Aug. 17
Canem	"	Consolidated M. & S. Co	13341	51.63	Nov. 25
Cave	"	" "	13342	51.65	Nov. 25
Cave	"	Canada Cement Co	8597	48.62	Sept. 24
Chance No. 1	"	Russell Howard Bennett	13391	51.65	Aug. 17
Chance No. 2 Frac	"	" "	13390	50.59	Aug. 17
Chance No. 3	"	" "	13394	51.65	Aug. 17
Chance No. 4	"	" "	13389	51.65	Aug. 17
Cinnabar	"	Consolidated M. & S. Co	13349	47 48	Nov. 25
Denver No. 1	"	Russell Howard Bennett	13403	51 65	Aug. 17
Denver No. 2	"	" "	13402	51.65	Aug. 17
Denver No. 3	"	" "	13404	51.65	Aug. 17
Denver No. 4	"	" "	13401	51.65	Aug. 17
Denver No. 5	"	" "	13405	51.65	Aug. 17
Dinkum Frac	"	Consolidated M. & S. Co	5585	22.25	Nov. 25
Dorothy	"	" "	2167	43.05	Feb. 8
Dull	"	" "	13301	51.65	Nov. 24
Durango	"	Edward J. Paterson	7016	51.65	Aug. 10
Etna	"	"	7015	38.71	Aug. 10
Finis	"	Consolidated M. & S. Co	13320	51.65	Nov. 25
Flotsam	"	" "	13310	51.65	Nov. 24
Harvard	"	" "	13292	51.65	Nov. 24
Jetsam	"	" "	13307	51.65	Nov. 24
Jure Fraction	"	" "	13345	34.57	Nov. 25
Lilac	"	" "	13294	51.65	Nov. 24
Mace	"	Russell Howard Bennett	13427	51.65	Aug. 18
Mesabi Fraction	"	" "	13426	51.58	Aug. 18
Mex Fraction	"	" "	13429	31.15	Aug. 18
Morning Fraction	"	Jacob P. Fink	3909	8.25	Feb. 3
Neptune Fraction	"	Consolidated M. & S. Co	13350	37.17	Nov. 25
Old	"	" "	13306	51.65	Nov. 24
Ontario Fraction	"	Russell Howard Bennett	13428	37.48	Aug. 18
Parr	"	Consolidated M. & S. Co	13316	51.65	Nov. 25
Point	"	" "	13304	51.65	Nov. 25
Portland	"	Fred W. Adolph	7205	45.11	Aug. 10
Post Fractional	"	Consolidated M. & S. Co	13309	47.13	Nov. 25
Rim	"	" "	13302	51.65	Nov. 24
Round	"	" "	13303	51.65	Nov. 25
Sand	"	" "	13305	51.65	Nov. 25
Shrub	"	" "	13281	51.65	Nov. 24
Silver Queen	"	William Stephen Santo	4053	51.38	Feb. 8
S.P.S.	"	Consolidated M. & S. Co	13293	51.65	Nov. 25
Star No. 1	"	Russell Howard Bennett	13379	50.67	Aug. 17
Star No. 2	"	" "	13378	45.62	Aug. 17
Star No. 3	"	" "	13380	51.65	Aug. 17
Star No. 4	"	" "	13421	51.65	Aug. 18
Sunrise	"	Canada Cement Co	8598	49.20	Sept. 24
Tire	"	Consolidated M. & S. Co	13297	51.65	Nov. 24
Top	"	" "	13321	51.65	Nov. 25
Venus	"	" "	13344	40.70	Nov. 25

EASTERN DISTRICT (No. 5)—*Continued.*

Claim.	Mining Division.	Grantee.	Lot.	Acres.	Date.
Wire	Fort Steele	Consolidated M. & S. Co.	13296	51.65	Nov. 25
Barnett	Ainsworth	Robert Garvin McLeod	2888	39.33	Feb. 9
Black Bear	"	George Bentley Gerrard	10783	36.30	June 11
Connie Frac. No. 2	"	William Henry Rothery Collister	5818	50.70	June 1
Franklin	"	Charles Nelson Ecclestone	3645	35.51	Feb. 23
Galt	"	Elizabeth Christina Collister	1650	20.24	June 1
Havana	"	Ethel Alexander Collister	5610	35.34	June 1
Hillside	"	Gertrude Ecclestone	1651	21.90	June 1
Iron Duke	"	James Arthur Carter	3190	51.65	Mar. 26
Last Chance	"	Ethel Alexander Collister	1649	48.34	June 1
Whistler	"	William Henry Rothery Collister	5614	48.51	June 1
Allouez	Slocan	Margaret Mollieres	4480	51.65	Mar. 8
Altoona	"	Andrew J. Murphy	1918	46.35	April 15
Aunty Lalla	"	Brian Russell Bland	2368	51.15	Mar. 30
Chetopha	"	Elizabeth Christina Collister	3534	45.56	June 1
Comstock	"	Ethel Woodburn Benzie	1027	41.32	June 1
Crawford Fraction	"	James Anderson Benzie	5197	19.45	June 1
Crested Butte	"	Margaret Mollieres	4481	51.65	Mar. 8
Crown Point	"	Gertrude Ecclestone	4488	14.04	June 1
Dalkeith	"	The Victoria Syndicate, Ltd.	2603	41.63	July 16
Erie	"	Ethel Woodburn Benzie	1029	50.68	June 1
Gladstone	"	Charles Nelson Ecclestone	2286	34.47	Feb. 23
Gordon	"	James Anderson Benzie	5196	26.88	June 1
Grace	"	Robert Holden Stewart	5532	44.92	July 16
Hazard Fraction	"	Peter Murray Elder	1400	12.61	Dec. 7
Hazard	"	Patrick James Keogan	1397	40.50	Dec. 7
Little Estella	"	The Victoria Syndicate, Ltd.	5534	19.68	July 16
Minnie	"	Robert Holden Stewart	5525	39.39	July 16
Minnie ha-ha	"	William George Clark	[1]3006	13.66	May 21
Mountain Chief No. 3	"	Patrick James Keogan	4470	25.02	Dec. 7
Negaunee	"	Alice Maud Mollieres	4477	39.87	Mar. 8
New Park	"	Sebastian John Renter	1398	38.12	Dec. 7
Pembroke	"	Peter Murray Elder	1399	51.65	Dec. 7
Pewabic	"	Ethel Mollieres	4478	51.65	Mar. 8
Revelstoke	"	Alice Maud Mollieres	4476	51.65	Mar. 8
Shoe Swap	"	Charles Nelson Ecclestone	3158	48.39	June 1
Silver Band	"	Edward Herbert Latham	5878	51.65	Dec. 7
Silver Glance Fr.	"	John Wesley Power	[1]2633	47.89	Sept. 7
Virginia	"	Charles Nelson Ecclestone	1028	50.54	June 1
Western Fraction	"	William George Clark	[1]3033	51.20	May 21
Western Frac. No. 2	"	" "	[1]3027	31.63	May 21
W.H.R.	"	Frank Lant Neilson	2535	45.33	Mar. 5
Ell	Slocan City	John Leslie Bland	5505	43.97	Mar. 20
Exe	"	Edith Bland	5504	44.80	Mar. 20
Eye Fraction	"	John Leslie Bland	5506	39.15	Mar. 20
Little Dorrit	"	Edith Bland	2370	51.65	Mar. 20
Little Dorrit Fr. No. 2	"	Brian Russell Bland	2369	10.72	Mar. 20
Scorpion	"	Mary Eleanor Bland	2894	51.65	Mar. 20
Silver Star	"	Audrey Dickinson	5495	29.17	Mar. 20
Blue Belle	Nelson	Joseph Henry Dunn	3843	51.65	April 9
Blue Jack	"	Percy Ferdinand Horton	2688	30.88	Nov. 23
Blue Jack Fraction	"	Adolph Edwin Place	2691	2.89	Nov. 23
Champane	"	Nels Helmer Peterson	5131	18.36	June 4
Dome Fraction	"	Archibald Bremner and James Buchanan Bremner	13051	30.01	April 15
Ella J	"	Clarence W. Rockwell	12611	51.65	Jan. 6
Farnham	"	Archie Bremner	5423	46.00	Dec. 1
Franklin	"	George Peder Haukedahl	4635	23.07	Feb. 3
Government	"	Associated Mining and Milling Co., Ltd.	4908	43.70	Nov. 16
Martilda	"	William Frampton	3870	51.58	Dec. 8
Red Fraction	"	Michael Egan	12701	30.49	April 15
Schmilka	"	George Goddard	3871	51.65	Dec. 8
Sitting Bull	"	William Walter Hartman	2690	51.37	Nov. 23
Sunrise	"	George Peder Haukedahl	4385	38.17	Feb. 3
Tea Pot	"	Archibald Bremner and James Buchanan Bremner	13052	45.17	April 15
Thorn Fraction	"	Axel Leaf	2237 G. 1	35.23	Sept. 28
Valparaso	"	William Frampton	4907	29.73	Oct. 30
White Cloud	"	Percy Ferdinand Horton and Adolph Edwin Place	2687	47.89	Nov. 23
Yellow Jack	"	Percy Ferdinand Horton	2689	31.58	Nov. 23
Yellow Jack Fraction	"	William Walter Hartman	2692	0.20	Nov. 23
Great Western	Arrow Lake	Philip Arthur Kittan	4503 G. 1	33.59	May 21
Norway	Trail Creek	Thomas Brown, Kurt Raht, Henry Carmichael, William Wallace MacKay, and Edward C. Perrott	1628	43.25	June 1
Hunter	Lardeau	Sophia Anna Bennett	4495	36.94	Mar. 8
L.V. Fractional	"	Alex. Carrie	5401	23.07	June 9
Last Chance	"	Emily Schofield	8665	51.34	Mar. 11
Lost Chord	"	"	8664	51.65	Mar. 17
Trapper	"	Sophia Anna Bennett	4494	51.65	Mar. 8
Canadian	Trout Lake	Alice Beatrice Purdy	4737	41.26	Mar. 17
Copper Queen	"	Charles Mason Oliver	6477	45.00	Mar. 8
Glooscap	"	Elmer Hadley Purdy	7257	32.02	Mar. 17
Galilleo	"	Richard Howard Graves	8659	28.43	Aug. 9
Kootenay No. 1	"	Adeline Matilda Purdy	7247	34.90	Mar. 17
Kootenay No. 2	"	" "	7248	18.00	Mar. 17
Pluto	"	Bullock Gold Mines, Ltd.	8658	32.43	Sept. 30
Silver Pick	"	John Lawrence Pridham	8711	44.46	Mar. 17
Silver Bell	Revelstoke	Alexander Wesley McIntosh	7493	50.96	July 2

WESTERN DISTRICT (No. 6).

Claim.	Mining Division.	Grantee.	Lot.	Acres.	Date.
Arcadian	Nanaimo	William Ernest Burns	142	51.10	July 2
Blue Jacket	"	George Saunders Mason	1833 G. 1	39.36	Jan. 7
Copper Chief	"	" "	1834 G. 1	45.55	Jan. 4
Copper King	"	Thomas Cobb	1835 G. 1	45.14	Jan. 4
Enid	"	Williams Adams Glasgow	280R1	46.25	Jan. 9
Flame	"	William Ernest Burns	143	44.23	July 2
Hemlock Fraction	"	Bertram Boyd-Wallis, Thomas H. Service, Richard Gerald Gore-Langton, and Edward F. Miller	30G	0.61	Sept. 4
Iron Horse	"	James E. Black	176	37.76	Jan. 7
Mountain Ash	"	Bertram Boyd-Wallis, Thomas H. Service, Richard Gerald Gore-Langton, and Edward F. Miller	28 G	47.84	Sept. 4
Multo Christo	"	Daisy Violet Crowe-Swords	344	36.40	Feb. 3
Silver King	"	George Jorgenson	1832 G. 1	44.21	Jan. 5
Silver Leaf	"	Bertram Boyd-Wallis, Thomas H. Service, Richard Gerald Gore-Langton, and Edward F. Miller	29 G	37.41	Sept. 4
Stella	"	Williams Adams Glasgow	281 R1	25.60	Jan. 9
Theodosia	"	George Jorgenson	1831 G. 1	44.02	Jan. 5
Venus Fraction	"	Frank Barnes	152	4.53	Sept. 7
Big I No. 1	Alberni	Joseph A. Drinkwater and Michael Tebo	1640	51.65	Feb. 3
Big I No. 2	"	" " "	1641	38.91	Feb. 3
Big I No. 3	"	" " "	1642	41.31	Feb. 3
Big I No. 4	"	" " "	1643	51.65	Feb. 3
Union	"	Charles Eilbeck Wilson	54	15.10	Aug. 10
Birch No. 2	Quatsino	Coast Copper Co.	1103	51.65	May 7
Black Bird	"	"	1098	45.29	May 7
Blue Jay	"	"	1099	45.73	May 7
Canary	"	"	1097	47.26	May 7
Cedar No. 2	"	"	1105	38.58	May 7
Eagle No. 11	"	"	1153	48.03	Mar. 15
Eagle No. 12	"	"	1154	46.82	Mar. 15
Eagle No. 13	"	"	1155	23.05	Aug. 10
Fir No. 2	"	"	1111	47.22	May 7
Hawk Fraction	"	"	1118	51.65	May 7
Hemlock No. 2	"	"	1104	50.04	May 7
Lark	"	"	1100	46.23	May 7
Locust	"	"	1114	46.89	May 7
Long Fraction	"	"	1116	31.00	May 7
Loon	"	"	1117	48.74	May 7
Maple No. 2	"	"	1112	51.64	May 7
Martin	"	"	1120	41.73	Sept. 23
Mink	"	"	1119	25.11	Sept. 23
Oak Fraction	"	"	1113	41.47	May 7
Pine No. 2	"	"	1110	46.71	May 7
Raven No. 2	"	"	1109	42.94	May 7
Red Bird	"	"	1096	45.44	May 7
Robin	"	"	1095	45.61	Mar. 12
Snowbird	"	"	1102	46.37	May 7
Spruce No. 2	"	"	1106	48.06	May 7
Swan No. 2	"	"	1108	42.31	May 7
Tamarack No. 2	"	"	1107	48.38	May 7
Teal Fraction	"	"	1094	11.37	Mar. 5
Quatsino King	"	Ole Anderson Sherberg	676	51.65	Aug. 10
Wren	"	Coast Copper Co.	1101	47.18	May 7
Beach	Vancouver	Charles Mason Oliver	5560	32.23	Nov. 29
Cougar	"	Fraser Sanderson Keith	3408 G. 1	37.37	Aug. 23
Eldorado	"	Olive Graef Treat	5543	26.00	Sept. 30
Empress	"	John Hamilton Thompson	3407 G. 1	40.01	Aug. 23
Iron King	"	" "	3402 G. 1	22.86	Aug. 23
Iron King No. 2 Fraction	"	Fraser Sanderson Keith	3410 G. 1	10.79	Aug. 23
Morning Star	"	" "	3403 G. 1	27.14	Aug. 23
Nellie F.	"	Charles Mason Oliver	5558 G. 1	51.59	Nov. 29
Peacock	"	" "	5561 G. 1	45.98	Nov. 29
Peacock No. 1	"	" "	5562 G. 1	51.51	Nov. 29
Snug Cove	"	" "	5557 G. 1	47.29	Nov. 29
Summit	"	John Hamilton Thompson	3404 G. 1	48.32	Aug. 23
Topsy	"	Charles Mason Oliver	5559 G. 1	38.45	Nov. 29
Vulcan	"	John Hamilton Thompson	3406 G. 1	38.43	Aug. 23
Vulcan	"	Fraser Sanderson Keith	3411 G. 1	21.10	Aug. 23
Wisconsin	"	Olive Graef Treat	5544	28.40	Sept. 30
Providence	New Westm'r	Claude Daniel Morgan	1737 G. 1	41.57	Mar. 8
Silver Bell	"	" "	1738 G. 1	51.65	Mar. 8

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Series.

British Columbia. *Bureau of Mines.*

Annual Report of the Minister of Mines for the year ended 31st December, 1926, being an account of mining operations for gold, coal, etc., in the Province. John D. Galloway, Provincial Mineralogist. 468 pp., plates, maps, 1926.
Victoria, Government Printing Office, 1927.

Author.

Galloway, John D. *(Provincial Mineralogist.)*

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Victoria, Government Printing Office, 1927.

RETURN

Of Moneys received and paid by the Official Administrators of the Province as required by section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

J. D. MacLEAN,
Minister of Finance.

Treasury, February 25th, 1927.

ATLIN LAKE MINING DIVISION.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.*		CR.—*January 1st to December 31st, 1926.*	
ESTATE OF AUGUST BRUNICH.			
Merchandise	$ 124 72		
ESTATE OF LOUIS DUC-GONINAT.			
Funeral	$ 103 00	Cash	$ 106 00
Inquest fee	3 00		
ESTATE OF JOHN E. FOX.			
Merchandise	$ 162 50		
ESTATE OF ANDREW GRIER.			
Merchandise	$ 10 05		
ESTATE OF JOSEPH HOUSEL.			
Merchandise	$ 250 67		
Board and lodging	121 60		
ESTATE OF F. W. MARKUS.			
Mining recording fees	$ 230 00		
ESTATE OF COLIN McCALLUM.			
Funeral	$ 114 75	Cash	$ 33 40
Hospital	6 00	Sale of cabin	60 00
		Sale of vegetables	27 35
ESTATE OF NILS OTTO NELSON.			
Merchandise	$ 55 85		
ESTATE OF CHRIS H. NISSEN.			
Mining recording fees	$ 20 00		
ESTATE OF TADE OBALSKI.			
Taxes	$ 18 66		
ESTATE OF W. G. PAXTON.			
Board	$ 61 30		
ESTATE OF CHARLES PETITT.			
Merchandise	$ 179 12		
Board	17 65		
Loan	7 16		
Survey fee	5 37		
Horse-hire	2 00		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF GUSTAVUS SANDBERG.

Labour	$ 25 00
Mining recording fees	12 50

ESTATE OF JAS. E. SIMONS.

Mining recording fees	$ 85 02

ESTATE OF DANIEL SULLIVAN.

Taxes	$ 21 25

ESTATE OF AXEL SWANSON.

Merchandise	$ 765 43
Loan	18 17
Survey fee	13 63
Horse-hire	5 10
Cartage	1 82

ESTATE OF J. W. THOMPSON.

Mining recording fees	$ 85 00

ESTATE OF R. J. WALLACE.

Heirs	$ 596 82

C. L. MONROE,
Official Administrator.

CARIBOO ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF T. H. BARNES.

Solicitors	$ 50 00
Heirs	158 97

ESTATE OF ROBERT BUCHANAN.

Commission	$ 6 48	Sale of land	$ 126 20
Taxes	19 12		
Solicitors	40 88		
Expenses	6 25		
Burial	50 00		

ESTATE OF GEORGE BOWERS.

Commission	$ 1 25	Rentals	$ 25 00
Taxes	3 90		
Solicitors	25 00		
Merchandise	35 00		

ESTATE OF GEORGE BURTHOLME.

Taxes	$ 5 00
Heir	12 00

ESTATE OF W. H. BECK.

Cash	$ 32 00

ESTATE OF JAMES BIBBY.

Heirs	$ 662 63

ESTATE OF T. CROSSLEY.

Expenses	$ 75

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Alex. Ducharme.			
Telegrams	$ 11 88	Bank	$ 563 59
Solicitors	78 00	Sale of furs	815 00
Repayment of advance	333 33	Refund	2 50
Advertising	10 40	Sale of effects	150 00
Probate duty	75 00		
Succession duty	97 00		
Supplies and labour	203 00		
Commission	84 05		
Estate of John Emil Erickson.			
Advertising	$ 9 90	Sale of effects	$ 41 00
Commission	2 05	Refund	2 00
Merchandise	38 75		
Legal	9 80		
Estate of Obediah Fitzpatrick.			
Funeral	$ 50 00	Sale of land	$ 105 00
Taxes	20 97		
Commission	5 25		
Advertising	4 48		
Estate of Adah Halden.			
Expenses	$ 3 00	Interest	$ 135 00
Taxes	18 03		
Estate of Wm. Kruger.			
Solicitors	$ 8 00		
Estate of A. Lucas.			
Taxes	$ 22 96	Sale of land	$ 400 00
Commission	20 00		
Solicitors	26 27		
Telegrams	1 15		
Estate of R. McDougall.			
Funeral	$ 60 00	Bridgemen's Union	$ 77 60
Expenses	1 10		
Commission	3 88		
Estate of Trueman S. McCoombs.			
Expenses	$ 5 00	Bank	$ 99 71
Advertising	4 16		
Commission	4 98		
Estate of James McCleary.			
Commission	$ 15 00	Cash	$ 3 50
Funeral	75 00	Sale of effects	297 25
Advertising	3 36		
Solicitors	20 00		
Hospital	7 95		
Medical	12 35		
Merchandise	165 79		
Law-stamps	1 30		
Estate of Angus McPhail.			
Telegrams	$ 6 25		
Expenses	15 00		
Estate of George Murdoch.			
Commission	$ 14 50	Sale of effects	$ 287 98
Probate duty	35 50	Refund	2 00
Solicitors	62 40		
Advertising	10 80		
Labour	4 00		
Funeral	80 00		
Express and telegrams	7 35		
Estate of L. E. Muller.			
Expenses	$ 1 50		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of J. M. Medwidy.			
Solicitors	$ 5 00		
Heirs	38 81		
Official Administrator	38 80		
Estate of Maurice Orioli.			
Expenses	$ 146 61	Sale of effects	$ 415 15
Commission	20 75		
Funeral	52 00		
Probate duty	11 10		
Estate of Jos. Olhman.			
Commission	$ 10 75	Sale of land	$ 215 00
Taxes	68 05		
Government on account land	96 00		
Solicitors	11 89		
Merchandise	4 01		
Hospital	6 57		
Medical	19 05		
Labour	9 50		
Estate of M. T. Persson.			
Commission	$ 2 92	Cash	$ 58 42
Estate of Joseph Spratt.			
Commission	$ 8 75	Cash	$ 175 00
Lease	25 00		
Solicitors	32 20		
Advertising	5 60		
Loan	25 00		
Estate of Ugan Viali.			
Solicitors	$ 229 90		
Labour	10 00		
Heirs	1,310 77		
Estate of T. Wycott.			
Commission	$ 60	Cash	$ 12 00
Heirs	11 40		
Estate of M. W. Schilling.			
Funeral	$ 375 22	Cash	$ 366 47
Commission	77 14	Hospital	24 10
Solicitors	76 00	Bank	1,147 03
Advertising	4 48	Interest	27 50
Telegraph	21 98	Sale of effects	50 00
Medical	100 00	Sale of bonds	1,029 40
Hospital	4 00	Dividend	370 82
Probate duty	19 54		
Succession duty	38 69		

EDGAR C. LUNN,
Official Administrator.

COLUMBIA ELECTORAL DISTRICT.

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Charles Kittelson.			
Taxes	$ 10 00	Interest on Bonds	$ 27 50
Administration	1 36		
Estate of Alexander Vachon.			
Taxes	$ 38 40	Rent	$ 100 00
Interest on mortgage	48 00		
Administration	5 00		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of J. S. McKenzie.			
Funeral	$ 158 10	Final payment of lots	$ 100 00
Merchandise	104 20		
Note	50 00		
Administration	5 00		
Heir, balance of estate	11 33		
Estate of George Prokopsky.			
Solicitor's fees	$ 50 00		
Balance owing on lots, South Vancouver	349 70		
Estate of Charles Lindstrum.			
Administration	$ 4 52	Cash on person	$ 63 65
		Balance of wages	26 75
Estate of Emil Matson.			
Solicitor's fees	$ 31 00	Sale of effects	$ 135 00
Taxes	10 00		
Administration	6 75		
Estate of John Manderson.			
Funeral	$ 125 50	Sale of crop	$ 118 10
Travelling expenses	22 00	Bank	507 92
Probate duty	4 75		
Succession duty	9 41		
Advertising	6 72		
Solicitor's fees	40 00		
Administration	31 30		
Estate of Ernest James Bowden.			
Solicitor's fees	$ 36 05	Imperial Bank	$ 534 40
Probate duty	12 50		
Administration	26 72		
Widow's share of estate	229 56		

G. E. SANBORN,
Official Administrator.

COMOX ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of W. Anderson.			
Beneficiaries	$3,462 84		
Estate of P. Beltz.			
Administration fees	$ 5 05	Sale of Merchandise	$ 102 45
Funeral expenses	97 40	Insurance	2 50
Estate of W. Buchan.			
Commission	$ 4 84	Cheques	$ 89 19
Legal fees	10 45	Cash	8 00
Heirs	81 65		
Estate of F. Butler.			
Heirs	$ 106 61		
Estate of W. Dawson.			
Legal fees	$ 62 40	Insurance	$1,000 86
Funeral expenses	172 00		
Commission	50 04		
Board and room	263 00		
Medical	135 00		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Mary Louise Dickie.			
Commission	$ 9 96	Sale of property	$ 199 30
Legal fees	55 00		
Estate of J. Emery.			
Legal fees	$ 13 70	Cheques	$ 117 65
Commission	5 88		
Board	29 40		
Estate of Chas. Englund.			
Commission	$ 50		
Beneficiaries	47 04		
Estate of W. Ferguson.			
Taxes	$ 20 73		
Heirs	469 30		
Estate of T. Holmes.			
Commission	$ 09	Dividend	$ 1 89
Estate of F. Joss.			
Commission	$ 26	Dividend	$ 5 29
Estate of John Kelly.			
Legal fees	$ 8 70	Cheque	$ 50 00
Medical	57 14	Wages	19 30
Commission	3 46		
Estate of M. Mee.			
Administration fees	$ 5 97	Cash	$ 22 00
Probate duty	1 17	Bank	367 33
Legal fees	42 50		
Commission	19 46		
Funeral expenses	198 60		
Estate of H. McClusky.			
Commission	$ 7 75	Rent	$ 155 00
Estate of S. Neill.			
Funeral expenses	$ 30 00	Wages	$ 38 65
Administration fee	2 95		
Commission	1 98		
Legal	4 82		
Estate of W. Nugent.			
Court fees	$ 4 00	Cash	$ 15
Probate duty	175 03	Wages	6 39
Succession duty	199 54	Bank	2,435 13
Interest	1 30	Bonds	1,018 66
Legal	1 25		
Refund	3 05		
Commission	173 01		
Funeral expenses	195 00		
Estate of J. Sampson.			
Probate duty	$ 49 99	Bank	$ 379 75
Funeral expenses	218 50		
Legal	75		
Commission	18 98		
Medical	41 00		
Estate of R. Secco.			
Commission	$ 2 25	Wages	$ 45 15
Legal	13 95		
Estate of W. Stark.			
Heir	$ 129 32		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of H. Thomas.			
Funeral expenses	$ 254 00	Bank	$ 815 20
Commission	44 36		
Legal	46 45		
Rent	317 50		
Estate of A. Vaughan.			
Commission	$ 5 87	Cash	$ 1 00
Legal	13 95	Property	116 50
Estate of Alex. Wright.			
Administration fees	$ 2 70	Bank	$ 30 50
Legal	10 75		
Commission	1 52		
Refund	14 00		

P. LEO ANDERTON,
Official Administrator.

CRANBROOK ELECTORAL DISTRICT.

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Jos. Patz.			
Commission	$ 2 31	Cash	$ 46 30
Estate of Sliar Slyviskar (Alan J. Sylvester).			
Commission	$ 3 25	Cash	$ 65 18
Accounts	31 50		
Estate of Peter Shields.			
Commission	$ 3 50	Cash	$ 78 00
Commission	40		
Mineral	61 00		
Estate of John Benck.			
Commission	$ 2 97	Cash	$ 59 50
Estate of George Bentley.			
Commission	$ 1 59	Cash	$ 2 85
		Bank	29 00
Estate of Fred Currie.			
St. Eugene Hospital	$ 5 00	Cash	$ 36 70
Commission	1 83		
Estate of Ole Carlson.			
Funeral	$ 330 00	Bank	$1,142 29
Accounts	48 00		
Commission	57 11		
Estate of Erick K. Erickson.			
Commission	$ 42 28	Cash	$ 845 62
Funeral	76 00		
Accounts	702 29		
Estate of Fred Foster.			
Accounts	$ 15 50	Cash	$ 179 90
Funeral	153 00		
Commission	8 99		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Jacob G. Johnson.			
Commission	$1,013 28	Cash	$ 4,051 95
Funeral	293 50	Bank	14,984 35
Probate and succession duty	4,957 54	Mortgages	1,230 00
Probate and succession duty interest	1,107 40		
Interest	38 75		
Accounts	3 15		
Estate of Mrs. Mabel E. Johnson.			
Commission	$ 53 20	Bank	$1,064 08
Funeral	225 00		
Probate and succession duty	3 33		
Accounts	138 29		
Estate of Alex. or E. Markstrom.			
Funeral	$ 126 00	Cash	$ 152 70
Commission	7 63		
Estate of James Milne.			
Commission	$ 538 46	Bank	$10,363 35
Probate and succession duty	658 44	Cash	406 04
Heirs	6,600 00		
Accounts	314 03		
Estate of Angus H. McLeod.			
Commission	$ 22 58	Cash	$ 451 75
Pasturage	30 00		
Funeral	155 00		
Estate of Augusti Sjoberg.			
Commission	$ 31 32	Cash	$ 626 40
Funeral	203 50		
Sundry accounts	16 95		
Estate of Carl J. Vold.			
Funeral	$ 178 00	Bank	$3,907 38
Commission	195 36		
Probate and succession duty	541 48		
Accounts	160 75		
Estate of Giovanni Zannini.			
Funeral	$ 188 00	Cash	$ 209 95
Commission	10 49		
Estate of Bill Zuk.			
Funeral	$ 83 00	Cash	$ 148 86
Commission	7 43		

JOHN LEASK.
Official Administrator.

FERNIE ELECTORAL DISTRICT.

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of A. Alexander.			
Commission	$ 6 35	Cash	$ 126 90
Funeral	106 00		
Probate duty	6 45		
Estate of T. Barrett.			
Commission	$ 1 82	Cash	$ 6 50
Probate duty	1 83	Wages	30 02

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of J. H. Byrne.			
Commission	$ 9 69	Cash	$ 4 75
Legal expenses	56 84	Bank	125 86
		Wages	63 45
Estate of Evan Evans.			
Taxes	$ 20 00		
Estate of Louis Egartner.			
Commission	$ 90	Cash	$ 18 45
Probate duty	92		
Estate of Marie Falip.			
Commission	$ 2 60	Interest on bonds	$ 52 50
Guardianship	24 00		
Estate of K. R. Foster.			
Commission	$ 15 50	Rent	$ 300 00
Ground-rent	25 00	Cash	10 00
Legal expenses	2 50		
Care of children	360 00		
Repairs	119 80		
Estate of J. P. Fisher.			
Beneficiary	$ 21 30		
Estate of George Gilbert.			
Commission	$ 46 00	Land-sales	$ 320 00
Repayments of loan	203 50		
Estate of P. Hrpka.			
Beneficiaries	$ 248 28		
Estate of P. V. James.			
Beneficiaries	$ 344 08		
Estate of Frank Murray.			
Commission	$ 7 50	Land-sales	$ 150 00
Legal expenses	28 60		
Estate of Frank Miller.			
Commission	$ 36 65	Bank	$ 471 27
Probate duty	22 58	Cash	262 20
Funeral	140 00		
Travelling expenses	18 50		
Legal expenses	62 45		
Medical and nursing	39 45		
Transportation	20 00		
Estate of A. McFarlane.			
Commission	$ 90	Wages	$ 18 05
Probate duty	90		
Estate of J. Pusley.			
Commission	$ 3 50	Land-sales	$ 70 00
Estate of A. Patterson.			
Commission	$ 2 25	Cash	$ 45 00
Funeral	164 90		
Estate of P. Pasqutto (or Pascutto).			
Commission	$ 7 78	Cash	$ 156 19
Payments	148 41		
Estate of J. Rivero.			
Taxes	$ 11 00		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of M. Roeser.			
Commission	$ 6 50	Land-sales	$ 130 50
Legal expenses	22 65		
Beneficiaries	111 25		
Estate of C. A. Sawyer.			
Commission	$ 1 36	Interest on bonds	$ 27 50
Taxes	12 00		
Insurance	11 50		
Beneficiary	15 00		
Estate of B. Scalzo.			
Commission	$ 13 75	Cash	$ 275 00
Legal expenses	8 00		
Beneficiaries	223 00		
Estate of E. H. Sparham.			
Commission	$ 124 06	Cash	$2,484 86
Salaries	329 03		
Merchandise	627 77		
Insurance	65 00		
Travelling expenses	8 65		
Repairs	19 00		
Telegrams	99		
Survey fees	38 04		
Estate of A. H. Watson.			
Commission	$ 38 55	Cash	$ 772 58
Probate duty	3 20		
Funeral	175 00		
Legal expenses	37 30		
Medical fees	149 00		
Hospital fees	70 00		
Beneficiaries	96 32		
Estate of Sohan Singh.			
Total payments	$ 248 25		

E. T. COPE,
Official Administrator.

FORT GEORGE ELECTORAL DISTRICT (NORTH OF 55TH PARALLEL).

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Frank Alexander.			
Probate duty	$ 23 71	Bank	$ 86 15
Law-stamps	4 70	Cattle-sales	609 08
Expenses, cattle-sales	141 55		
Estate of George Clark.			
G. Clark, remittance	$ 200 00	Sundry effects	$ 23 00
Estate of William E. Innes.			
Commission	$ 162 73	Sale of furs	$1,575 00
Coroner	451 90	Sale of goods	1,000 00
Adjusting accounts	40 00	Bank deposits	608 65
J. Adams	524 00	Cash	71 60
W. Wright	30 00	Webber	1 25
Tax Collector	5 00		
Law-stamps and postage	7 60		
Wilson & Wilson	65 00		
Express charges	3 45		
Merchandise	8 95		
Estate of Oliver Olsen.			
Law-stamps and postage	$ 3 10	Sale of effects	$ 95 25
Commission	4 75		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of William Quick.			
Adjusting accounts	$ 22 00	Miss Quick	$ 39 35
Merchandise, etc.	138 00	G.W.V.A.	5 00
Law-stamps and postage	3 50		
Hospital fees	25 00		
Medical fees	10 00		
Estate of Joseph Labelle.			
Law-stamps	$ 1 60	Land-sales	$ 75 00
Commission	12 50		
Dr. Watson	50 00		
Hospital fees	158 00		
Estate of Joseph Robinson.			
Sundry accounts	$ 204 75	Land-sales	$ 200 00
Registration fee	5 60	Sale of effects	26 00
Law-stamps and postage	4 50		

FRED FRASER,
Official Administrator.

FORT GEORGE ELECTORAL DISTRICT (SOUTH OF 55TH PARALLEL).

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Peter Ackerman.			
Commissioner of Lands	$ 25 00		
Heirs	474 27		
Estate of Wm. H. Breeze.			
Taxes	$ 6 20		
Estate of J. Brown.			
Funeral	$ 5 95	Cash	$ 1 45
		Sale	4 50
Estate of C. H. C. Draheim.			
Commission	$ 37 97	Sale	$ 273 50
Expenses	33 50	Insurance	35 67
Estate of James Dawson.			
Heir	$ 254 20		
Estate of Ole Ellingson.			
Heirs	$1,000 00		
Estate of E. Greenwood.			
Burial	$ 38 18		
Estate of Vic Gluske.			
Merchandise	$ 41 00		
Burial	49 95		
Estate of Claus Goranson.			
Merchandise	$ 31 10	Sale	$ 6 50
Commission	32		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of J. Gallos.			
Burial	$ 50 00	Cash	$ 1 00
Commission	5 45	Wages, C.N.R.	88 61
Expenses	1 75	Sale	19 60
Estate of W. A. Goodson (Missing).			
Commission	$ 19 55	Sale	$ 325 30
Conservation	63 16	Bank	65 70
Legal	31 35		
Merchandise	73 55		
Estate of John Hopman.			
Legal	$ 42 00	Rents	$ 24 00
Legal	15 00	Land-sales	311 00
Rent collection	2 40		
Commission	16 75		
Claim	211 00		
Claim	19 25		
Loan	10 00		
Estate of Rudolph Hesse.			
Expenses	$ 7 90		
Estate of J. Imberi.			
Commission	$ 4 18	Wages	$ 83 61
Estate of C. W. Lindblad.			
Burial	$ 48 60	Cash	$ 17 25
Commission	25 84	Sale	48 32
Legal	42 00	Bank	451 20
Probate duty	4 59		
Estate of Elbert Summers Mays.			
Commission	$ 67.50	Sales	$1,350 00
Taxes	98 00		
Legal	92 00		
Heir	1,092 50		
Estate of Nels Nelson.			
Expenses	$ 24 75	Sale	$ 97 15
Burial	35 00	Cash	1 65
Auto-hire	5 00		
Commission	4 92		
Estate of J. Nells.			
Burial	$ 7 08	Cash	$ 7 45
Commission	37		
Estate of A. Nelson.			
Commission	$ 37	Wages	$ 7 47
Estate of James McNett.			
Services on farm	$ 14 00		
Hospital	46 14		
Estate of Miles S. McPhee.			
Heirs	$ 742 58		
Estate of Charles Olson (Missing).			
Commission	$ 13 75	Sale	$ 275 00
Merchandise	138 45		
Legal	28 20		
Estate of C. O'Malley.			
Burial	$ 19 85	Wages	$ 15 90
Commission	1 05	Sale	5 00
Estate of John Palmerenko.			
		Sale	$ 1 00

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	

ESTATE OF J. PAVLOFF (MISSING).

Commission	$ 48	Sale	$ 9 70

ESTATE OF JOHN ROBERTSON.

Expenses	$ 34 75	Sale	$ 368 94
Medical	30 00	Refund	17 50
Hospital and burial	167 50		
Legal	45 00		
Probate and succession duty	13 98		
Commission	19 33		

ESTATE OF WILLIAM SHARPLY.

Burial	$ 5 68		

ESTATE OF WM. SLACK.

Burial	$ 5 80	Bank	$ 105 82
Probate duty	3 93	Sale	19 50
Succession duty	56 79	Sam. Slack	170 39
Legal	79 30		
Taxes	14 21		
Administration	5 00		
Land Registry fees	9 90		
Land Settlement Board	62 34		
Fencing	101 00		
Commission	10 02		

ESTATE OF C. W. SLATER (MISSING).

Express	$ 2 40	Sale	$ 55 65
Commission	2 78		

ESTATE OF KARL GERHARD JOHANSSON.

Expenses	$ 7 60	Sale	$ 14 85
Commission	73		
Heirs	32 27		

ESTATE OF GIOVANNI VACHIERO.

Burial	$ 58 70	Cash	$ 30 00
Probate duty	56 80	Wages	698 63
Legal	66 10	Bank	726 41
Express	1 20	Post-office Bank	2,605 98
Advertising	4 32	Effects	20 80
Expenses	3 00		
Merchandise	8 35		
Commission	204 09		

ESTATE OF G. N. WILLIAMS.

Heir	$ 542 51		

ESTATE OF JOHN WALLIN.

Burial	$ 28 50	Cash	$ 29 55
Expenses	23 90	Sale	121 45
Legal	41 85		
Probate duty	5 00		
Succession duty	34 40		
Medicines	3 50		
Medical	4 00		
Commission	7 52		

ESTATE OF J. H. COPLEY.

Legal	$ 42 00	Bank	$ 334 02
Expenses	35 00	Bank	325 00
Probate and succession duty	77 56	Sale	314 05
Car repairs, etc.	48 25	Rents	20 66
Funeral	60 90		
Commissions	49 68		

ESTATE OF J. N. ST. JAMES.

Expenses	$ 7 50	Cash	$ 1 35
Board bill	15 75	Wages	6 41
Commission	2 33	Sale	39 15

Dr.—*January 1st to December 31st, 1926.* Cr.—*January 1st to December 31st, 1926.*

ESTATE OF S. D. GILLIS.

Legal	$ 44 15	Cash	$ 24 30
Probate duty, etc.	7 00	Bank	139 13
Funeral	165 50	Sale	18 90
Administration	50 00	Note	193 00
Sale	3 00		
Commission	18 75		

ESTATE OF JACK MCDONALD.

Funeral	$ 90 00	Cash	$ 18 90
R. J. Garvey	15 50	Sale	111 75
Expenses	13 15		
Commission	6 53		

G. MILBURN,
Official Administrator.

GRAND FORKS-GREENWOOD ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.* Cr.—*January 1st to December 31st, 1926.*

ESTATE OF JOHN MCKELLAR.

Commission	$ 72 07	Sale of bonds	$1,115 70
Funeral	190 08	Bank	325 73
Postage and revenue	5 32		
Probate	47 01		
Succession	12 79		
Legal	62 30		
Medical	49 00		
Advertising	7 65		
Rents and merchandise	29 74		
Heirs	945 88		

ESTATE OF J. A. DELANDER.

Commission	$ 300 00	Paid by heirs	$1,272 00
Postage and revenue	6 70	Bank	7 84
Funeral	97 50	Sale of grain	60 00
Succession duties	609 50		
Land-taxes	57 87		
Legal expenses	169 12		
Doctor	8 50		
Gazette	8 15		
Advertising	7 40		
Debts	32 00		
Transportation	45 50		

ESTATE OF MARGUERITE ANNE GRAHAM.

Commission	$ 834 26	Bank	$ 2,808 06
Funeral	532 00	Bonds	1,043 65
Duties	146 53	Securities	12,457 58
Tax costs	104 80	Real estate	2,000 00
Legal	66 69		
Real estate	2,000 00		

ESTATE OF JOSEPH CUNNINGHAM.

Funeral	$ 75 00	Cash on deceased	$ 10 60
Legal	29 90	Sale of house	123 00
Administration	13 60	Wages	33 64
		Merchandise	20 00

ESTATE OF THOMAS THOMAS.

Funeral	$ 25 00	Rent	$ 70 00
Fire insurance	34 00	Bank	49 20
Collecting	3 00	Merchandise	3 00
Store repairs	27 00		

CHARLES KING,
Official Administrator.

GRAND FORKS-GREENWOOD ELECTORAL DISTRICT (GRAND FORKS PART).

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.*		CR.—*January 1st to December 31st, 1926.*	
ESTATE OF WILLIAM A. BROWN.			
Commission	$ 4 60	Cash	$ 92 50
Legal costs	83 85		
ESTATE OF WILLIAM S. EMARD.			
Commission	$ 6 60	Sale of effects	$ 47 00
Taxes	84 45	Land-sales	75 00
Expenses	10 25		
ESTATE OF MARGARETTA F. FOLGER.			
Legal costs	$ 47 10		
Heirs	30 09		
ESTATE OF JAMES H. MCCORMICK.			
Legal costs	$ 25 85		
Funeral	46 00		
Heirs	43 36		
ESTATE OF WILLIAM M. MCKAY.			
Funeral	$ 100 00	Cash	$ 183 50
Hospital	150 00	Land-sales	125 00
Commission	15 90	Cash	7 50
Expense of sale	38 20		
Legal costs	13 90		
ESTATE OF CHARLES PELLIETIER.			
Legal costs	$ 24 65		
Heirs	435 33		
ESTATE OF WILLIAM ST. JULIEN.			
Succession duty	$ 5 37	Cash	$ 78
Funeral	73 00	Cash	127 50
Medical	60 00	Refund	145 00
Taxes	70 12	Land-sale	350 00
Merchandise	10 10		
Commission	31 15		
Legal costs	77 84		
Expenses	48 02		
ESTATE OF HANS PETER THOMPSON.			
		Cash	$ 10 20
		Bank	415 01

J. A. MCCALLUM,
Official Administrator.

KAMLOOPS ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.*		CR.—*January 1st to December 31st, 1926.*	
ESTATE OF GIAMBATTISTA ARMANINI.			
Commission	$ 65 00	Mortgage	$1,300 00
Service	4 00		
Taxes	103 03		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF KNUTE ANDERSON.

Commission	$ 36 46	Cash	$ 90 35
Postage, forms, exchange, stamps, and phones	2 69	Sale of effects	75 00
Services	25 00	Fur cheque	64 14
Doctor, hospital, and ambulance	16 50	Bank	519 90
Legal expenses	50 40		
Funeral	100 00		
Probate duty	6 20		
Advertising	20 00		

ESTATE OF WILLIAM BABBITT.

Commission	$ 10 25	Land-sale	$ 95 45
Legal expenses	116 55	Rentals	10 00
Funeral	199 73		
Advertising	2 75		
Heirs	324 27		

ESTATE OF HERMAN BECKMAN.

Commission	$ 448 79	Bank	$ 19 55
Legal expenses	459 43	Balance from old Administrator	169 21
Commission	1 25	Debt due estate	283 33
Repairs	186 77	Bond premium refund	87 75
Light and water	102 75	Rentals	5,609 00
Fire insurance	609 50	Mortgage, principal	2,800 00
Life insurance for widow	554 76	Mortgage, interest	310 35
Taxes	3,455 75	Tax refund	4 00
Exchange	15		
Mortgage, principal and interest	2,080 00		
Expenses looking after Evans Orchard	648 43		

ESTATE OF THOMAS BRADLEY.

Commission	8 29	Cash on hand	$ 80 00
Legal expenses	15 30	Wages	8 00
Exchange and stamps	1 59	Bank balance	77 99
Probate duty	1 95		
Advertising	10 00		
Funeral	117 00		
Merchandise	11 86		

ESTATE OF JOHN BOULANGER.

Commission	$ 15 89	Sale of effects	$ 306 00
Postage	1 11	Wages	11 98
Funeral	75 00		
Legal expenses	31 50		
Advertising	10 00		
Work done and money lent	73 00		

ESTATE OF WILLIAM JAMES CAFFERY.

Probate duty	$ 1 20	Cash on hand	$ 4 10
		Wages	77 85
		Sale of effects	7 00

ESTATE OF PIETRO DELSANTO.

Commission	$ 2 00	Cash on hand	$ 5 15
Exchange and postage	24	Sale of suit-case	1 00
Probate duty	2 50	Wages	32 95
Legal expenses	16 40	Bank balance	94
Funeral	18 90		

ESTATE OF WILLIAM M. EITE.

		Dividend on shares	$ 86

ESTATE OF ALEXANDER FOSTER.

Advertising	$ 2 75
Taxes	14 11

ESTATE OF CHARLES ERNEST FREESTONE.

Commission	$ 10 75	Agreement of sale	$ 210 00
Interest on mortgage	70 00	Sale of rifle	5 00
Principal on mortgage	500 00		
Taxes	8 50		

ESTATE OF CAMPBELL W. W. GAULD.

Commission	$ 1 93	Sale of effects	$ 28 75
Auctioneer's fee	2 87		
Legatee	184 58		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	

Estate of Hugh Catherwood Graham.

Commission	$ 27 94	Cash on hand	$ 48 10
Exchange and postage	1 74	Sale of effects	25 00
Legal expenses	34 10	Rental	75 00
Advertising	10 00	Bank balance	410 76
Hospital	11 00		
Doctor	15 00		

Estate of Hans Hansen.

Legal expenses	$ 83 20		
Heirs	333 71		

Estate of William Harris.

Commission	$ 88	Cash on hand	$ 3 50
Postage	32	Sale of effects	19 25
Merchandise	21 55		

Estate of Sam Hill.

Commission	$ 4 89	Sale of effects	$ 97 95
Services	77 95		

Estate of Anders Janson.

Commission	$ 1 50	Rental	$ 30 00
Legal expenses	12 10		
Taxes	6 00		
Advertising	2 75		

Estate of George Johanson.

Heirs	$ 39 45		

Estate of Arthur Horatio Jarman.

Commission	$ 4 73	Wages	$ 94 66
Legal expenses	14 40		
Exchange and postage	92		
Advertising	10 00		
Doctor	12 70		
Board	49 24		
Work done	2 67		

Estate of Sam Kee.

Commission	$ 1 58		
Taxes	24 00		

Estate of George Medsker.

Commission	$ 66 71	Mortgage, principal	$ 325 00
Agent's commission	100 00	Mortgage interest	55 14
Legal expenses	162 43	Sale of land	1,000 00
Exchange	2 50		
Telegrams	2 42		

Estate of Nick Matock.

Revenue-stamps	$ 32	Cash on hand	$ 27 40
		Bank balance	757 16

Estate of Allan McPhedran.

Commission	$ 31 53	Sale of suit-case	$ 50
Agent's commission	50 00	Sale of lands	235 00
Legal expenses	113 24	Rentals	24 25
Taxes	18 55	Agreement of sale	375 00
Principal interest, etc., on mortgage	206 65		
Funeral	50 00		
Postage	1 28		
W. Smith	45 00		
Doctor	2 50		
Merchandise	6 25		

Estate of Wallace Harry McPherson.

Commission	$ 1 89	Cash on hand	$ 18 00
Postage and express	1 91	Wages	16 80
Legal expenses	12 85	Sale of effects	3 00
Funeral	20 75		
Probate duty	40		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF FRANK MCPHERSON.

Commission	$ 1 48	Cash on hand	$ 24
Postage	52	Sale of effects	15 00
Probate duty	50	Sale of rifle	6 50
Legal expenses	17 30	Insurance	10 00

ESTATE OF JOHN NICHOLAS.

Legal expenses	$ 13 14

ESTATE OF ROBERT PARKER.

Commission	$ 860 42	Interest	$1,503 25
Duty	104 93	Rentals	280 00
Legal expenses	286 71	Dividends	12 00
Repairs	135 51	Crop returns	112 64
Exchange and postage	14 76	Principal on mortgage	407 34
Expenses, S.A. property	106 10	Exchange	1 40
Taxes	31 60		
Insurance	9 00		
Heirs	2,350 00		

ESTATE OF PETER MAGNUS PARSON.

Commission	$ 4 82	Advance by heir	$ 213 43
Exchange, postage, stamps, telegrams, phones, and expenses	7 04	Sale of effects	20 50
Services	10 00	Crop proceeds	75 95
Principal and interest on mortgage	538 00		
Taxes	4 00		
Heir	17 96		
Legal expenses	41 75		

ESTATE OF WILLIAM PHILLIPS.

Search fee and postage	$ 55
Heirs	62 45

ESTATE OF DAVID POTTER.

Commission	$ 11 52	Sale of effects, horses, hay, etc.	$ 229 50
Postage and phones	83	Bank balance	1 18
Legal expenses	45 35		
Services	24 40		
Duty	25 14		
Advertising	10 00		
Taxes	5 05		
Funeral	50 00		
Money lent deceased, etc.	26 50		

ESTATE OF UNIDENTIFIED MAN, BLUE RIVER.

Cash on hand	$ 17 05

ESTATE OF JOHN A. WAHLSTROM.

Commission	$ 60 05	Dividends on claim	$ 1 07
Postage	95	Sale of land	900 00
Beneficiary	1,261 68		

ESTATE OF JOSEPH WALSH.

Commission	$ 2 67	Cash on hand	$ 3 16
Postages	1 03	Wages	50 43
Legal expenses	12 65		
Duty	50		
Merchandise	23 11		

ESTATE OF JAMES YATES.

Commission	$ 76 97	Cash on hand	$ 58 15
Postage, exchange, etc.	4 09	Wages, horse-hire, etc.	705 62
Funeral	110 00	Compensation Board	7 20
Services	98 15	Bank balance	70 17
Legal expenses	31 50	Sale of horses, harness, sleighs, etc.	698 50
Auctioneer's fees	44 40		
Probate duty	12 63		
Pasture	10 00		
Livery	50 25		
Advertising	10 00		
Freight refund	16 00		
Avenue Jewellers	2 00		

ESTATE OF DANIEL ZAYAC.

Heirs	$ 207 42

F. TEMPLE CORNWALL,
Official Administrator.

KASLO-SLOCAN ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Gustaf Alm.			
Commission	$ 131 66	Cash	$1,351 65
Travelling expenses	16 60		
C.G. fees, etc.	12 00		
Wages	406 30		
Law costs	57 55		
Taxes	2 50		
Merchandise	5 80		
Estate of Ella Brown.			
Commission	$ 3 50	Land-sales	$ 70 00
Taxes	21 16		
Estate of George Melville Brown.			
Commission	$ 47 44	Cash	$ 95 37
Probate duty	9 32	Bank	853 65
Funeral	112 00		
Hospital	34 30		
Medical	100 00		
Advertising	5 60		
Law costs	44 80		
Estate of Charles Campbell.			
Heirs	$ 766 20		
Estate of Peter Cameron.			
Commission	$ 10 00	Lease	$ 200 00
Law costs	124 50		
Taxes	41 76		
Free miner's licence	5 00		
Estate of Benanimo Colgaro.			
Commission	$ 95 75	Cash	$ 47 00
Funeral	371 90	Bank	1,868 66
Medical	75 00		
Estate of Antonio Guiseppe Depretto.			
Commission	$ 104 92	Bank	$2,098 55
Probate duty	20 90		
Succession duty	20 68		
Funeral	145 00		
Medical	20 00		
Advertising	6 24		
Law costs	66 45		
Estate of William Dunn.			
Commission	$ 13 50	Cash	$ 135 00
Merchandise	97 10		
Funeral	102 00		
Estate of Sidney Thomas Elliott.			
Commission	$ 147 86	Cash	$ 876 91
Law costs	97 10	Bank	1,535 15
Taxes	3 24		
Estate of Jens Elgleson.			
Commission	$ 1 93	Cash	$ 19 00
Funeral	36 82	Bank	19 75
Estate of Alfred Edwards.			
Commission	$ 57 86	Cash	$ 40 00
Funeral	211 50	Bank	1,117 29
Probate duty	11 50		
Succession duty	11 39		
Advertising	7 20		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	

ESTATE OF JAMES RUSSELL HARDIE.

Taxes	$ 55 85	Refund	$ 23 85

ESTATE OF WILLIAM HORKAN.

Commission	$ 7 60	Cash	$ 154 38
Registry fee	50		
Advertising	17 42		
Law costs	75 00		

ESTATE OF OLE JACOB HANSEN.

Commission	$ 9 89	Cash	$ 82 66
Law-stamps	5 00	Bank	115 17
Advertising	4 50		
Board	45 00		
Funeral	52 50		
Merchandise	3 35		

ESTATE OF JOHN GRIFFITH JENKINS.

Commission	$ 250 00	Cash	$5,000 00
Free miner's licence	5 00		
Funeral	112 30		
Advertising	6 40		
Probate duty	174 12		
Succession duty	198 50		
Law costs	503 55		
Cartage	2 50		
Promissory notes	253 00		
Merchandise	212 47		
Board and lodging	1,048 55		
Wages	850 00		

ESTATE OF ANDREW LEET.

Taxes	$ 17 50		
Law costs	34 00		

ESTATE OF ALFRED LEBLANC.

Commission	$ 92	Cash	$ 93 50
Funeral	75 00		

ESTATE OF WALTER PHILIP MALONEY.

Funeral	$ 52 50	Cash	$ 52 50

ESTATE OF DANIEL MACLEOD.

Commission	$ 40 00	Bank	$ 800 10
Probate duty	26 09		
Funeral	130 00		
Law costs	49 85		
Medical	9 00		
Advertising	5 44		

ESTATE OF WILLIAM OLVER.

Probate duty	$ 2 52		

ESTATE OF ANDREW PETERSON.

Commission	$ 25 00	Land-sale	$ 500 00
Taxes	11 20		
Law costs	19 25		

ESTATE OF FREDERICK MATHIAS REEDER.

Commission	$ 24 58	Cash	$ 13 66
Probate duty	28 95	Bank	478 12
Funeral	110 00		
Law costs	41 30		
Advertising	6 56		
Taxes	39 53		

ESTATE OF JOHN SWAN.

Commission	$ 22	Cash	$ 4 52
Heirs	12 90		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Edward Eugene Shea.			
Law-stamps	$ 4 00	Cash	$ 142 25
Funeral	100 00		
Commission	7 10		
Merchandise	14 20		
Estate of Charles Williams.			
Commission	$ 50	Cash	$ 11 00
Law costs	100 00		

RONALD HEWAT,
Official Administrator.

LILLOOET ELECTORAL DISTRICT (PORTION OF THE COUNTY OF CARIBOO).

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of E. Lambert.			
		Sale of goods	$ 29 75
Estate of Alexander McDonald.			
		Wages	$ 50 01
		Land-sales	498 75
Estate of Andrew Berg.			
		Sale of effects	$ 7 65
Estate of F. Roddy.			
		Sale of effects	$ 394 50

ALEC OGSTON,
Official Administrator.

NANAIMO ELECTORAL DISTRICT.

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Backtour Singh.			
Bill of costs	$ 83 90		
Telephone	1 10		
Widow	2,043 04		
Estate of Hannah Baird.			
Commission	$ 21 60	Bank	$ 432 08
Advertising	6 72		
Insurance premium	27 90		
Estate of Henry Riggs.			
Heir	$ 83 37		
Estate of John Blades.			
Funeral	$ 112 42	Bank	$ 121 60
Commission	6 08		
Law-stamps	3 10		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Carl Carlson.			
Commission	$ 5 67	Wages	$ 77 74
Bill of costs	6 70	Cash	35 55
Estate of James or Joseph Chalmers.			
Commission	$ 34 74	Cash	$ 403 80
Probate duty	24 73	Account	18 20
Funeral	193 50	Bank	272 74
Launch-hire	22 00		
Legal costs	25 80		
Express	75		
Estate of Marion Cheatwood.			
Commission	$ 12 77	Refund price of cabin	$ 175 00
Funeral	157 50	Auction sale	76 60
Advertising	3 92	Wages	3 75
Wages	24 71		
Merchandise	47 15		
Legal costs	7 70		
Law-stamps	1 60		
Estate of George Compton.			
Taxes	$ 14 88		
Estate of Anna Belle Curtis.			
Commission	$ 7 94	Auction sale	$ 158 85
Estate of Alfred James Edwards.			
Heirs	$ 405 25		
Estate of Louis Endrizzi.			
Commission	$ 32 78	P.O. Savings Bank	$ 655 60
Advertising	3 36		
Estate of Samuel George.			
Commission	$ 22 75	Cash	$ 40 00
Probate duty	22 37	Cheque	10 00
Freight	72	Bank	405 00
Estate Charles J. Hewson.			
Taxes	$ 35 88		
Estate of Johan Adolf Kristiansen.			
Taxes	$ 14 75		
Estate of Paul Kozak.			
Heirs	$ 415 71		
Estate of William Millett.			
Commission	$ 25 34	Mortgage and interest	$ 506 50
Estate of Andrew McKinnell.			
Commission	$ 194 58	Rent	$ 398 00
Wages	43 00	Pond and interest	2,170 00
Merchandise	22 39	Victory Loan and interest	1,114 50
Loan	71 00	Bank	187 14
Probate and succession duty	752 02		
Advertising	19 20		
Taxes	221 32		
Legal costs	103 90		
Repairs	25 75		
Law-stamps, etc.	1 00		
Heirs	3,300 00		
Insurance	22 50		
Estate of William Reid.			
Commission	$ 59 57	Bank	$1,191 37
Legal costs	108 15		
Funeral	279 00		
Hospital	69 75		
Medical	359 00		
Advertising	7 20		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of John Robinson.			
Commission	$ 12 00	Agreement of sale	$ 240 00
Taxes	8 80		
Heiress	160 00		
Estate of O. P. Stamer.			
Commission	$ 74 75	Rent	$ 22 00
Taxes	13 68	Land-sales	190 00
Advertising	3 84	Taxes	1 00
Legal costs	25 05		
Estate of Alexander Stefanuk.			
Commission	$ 5 17	Bank	$ 103 41
Legal costs	7 70		
Estate of Sherman Stull.			
Commission	$ 23 62	Cash	$ 59 35
Probate duty	2 74	Auction sale	168 60
Legal costs	24 90	Sick benefits	209 50
Funeral	192 50	Watch and chain	35 00
Hospital	213 50		
Medicine	7 25		
Estate of Peter Sundberg.			
Commission	$ 2 43	Wages	$ 48 57
Estate of William Thompson.			
Taxes	$ 3 00		
Estate of Albert Francoeur.			
Taxes	$ 10 15		

L. A. DODD.
Official Administrator.

NELSON AND CRESTON ELECTORAL DISTRICTS.

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Albert J. Copsey.			
Commission	$ 4 48	Cash	$ 47 60
Heir	43 12		
Estate of Napoleon Desharnais.			
Commission	$ 5 00	Sale of property	$ 100 00
Taxes	63 14		
Estate of Andrew G. Erickson.			
Taxes	$ 12 75		
Estate of August Erickson.			
Commission	$ 13 50	Bank	$ 270 28
Estate of George Henry Fischer.			
Miner's licence	$ 5 00		
Assessment-work	175 00		
Estate of A. G. Flint.			
Commission	$ 22 60	Sale of property	$ 452 25
Legal expenses	120 00		
Heir	350 00		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of William Gosnell.			
Repairs	$ 79 00	Rents	$ 79 00
Legal expenses	473 28	Sale of property	3,440 58
Commission	2,508 43	Stocks and debentures	22,260 00
Taxes	674 33	Interest	40 00
Insurance	54 56	Dividends	31 00
Heirs	21,350 00		
Estate of Harold Gobbett.			
Commission	$ 27 33	Bank	$ 546 59
Legal expenses	63 00		
Estate of Thomas Gough.			
Commission	$ 5 31	Dividends	$ 6 25
Account of liabilities	100 94	Sale of stock	100 00
Estate of Alfred M. Hooper.			
Commission	$ 12 50	Sale of land	$ 250 00
Heir	237 50		
Estate of Erik Hjort.			
Commission	$ 5 55	Cash	$ 69 15
Estate of Henry Hugh Harshaw.			
Probate duty	$ 505 08	Bank	$10,151 71
Succession duty	959 66		
Commission	507 58		
Funeral	268 90		
Hospital and medical	539 15		
Sundry accounts	21 60		
Legal	87 25		
Estate of Nels Halvorsen.			
Funeral	$ 104 65	Sale of effects	$ 27 05
Commission	8 45	Sale of land	100 00
Taxes	7 05		
Sundry accounts	6 90		
Estate of John James.			
Commission	$ 2 50	Sale of land	$ 50 00
Estate of Olaf Knudson.			
Commission	$ 17 35	Bank	$ 347 19
Funeral	130 00		
Legal expenses	45 00		
Probate duty	10 77		
Estate of James Lambert.			
Commission	$ 83 25	Personal property	$ 550 00
Legal expenses	192 34	Sale of stock	15 00
Heir	289 41		
Estate of George W. Longmire.			
Legal expenses	$ 84 00		
Sundry accounts	5 15		
Probate duty	32 43		
Heirs	2,956 25		
Estate of Mike Mellon.			
Probate duty	$ 36 55	Bank	$ 738 35
Commission	36 90		
Medical	511 67		
Estate of Cecily B. Martin.			
Commission	$ 79 20	Interest	$ 40 69
		Cheque	231 19
		Shares	1,312 18
Estate of Agnes Jane Matthews.			
Commission	$ 6 60	Sale of effects	$ 90 00
Sundry accounts	83 40		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Donald John Morrison.			
Commission	$ 16 65	Bank	$ 313 23
Legal expenses	30 35		
Probate duty	3 10		
Heirs	263 13		
Estate of Catherine Morrison.			
Commission	$ 13 15	Estate of D. J. Morrison	$ 263 13
Legal	31 25		
Heirs	218 73		
Estate of Malcolm McDougall.			
Commission	$ 14 98	Sale of lands	$ 299 50
Taxes	4 60		
Legal	4 00		
Heirs	1,293 31		
Estate of John Nelson.			
Legal	$ 46 50	Bank	$ 401 23
Medical	63 70		
Probate duty	2 00		
Funeral	186 00		
Commission	20 05		
Estate of William F. Nack.			
Commissions	$ 47 49	Cash	$ 949 65
Legal	165 00		
Estate of Adolph Rydeen.			
Probate duty	$ 321 73	Bank	$2,210 21
Succession duty	54 62		
Legal	100 00		
Commissions	110 50		
Taxes	56 66		
Estate of Peter Synkiw.			
Commission	$ 2 12	Cash	$ 42 50
Heir	88 12		
Estate of Peter Swanson.			
Commission	$ 16 65	Bank	$ 310 31
Probate duty	52 85		
Succession duty	20 08		
Estate of James Wright.			
Heir	$4,631 34		
Estate of Elizabeth Wright.			
Commissions	$ 249 12	Estate of James Wright	$4,631 34
Legal	141 00	Interest	41 25
Heir	6,563 07	Property	268 66
Estate of Agnes West.			
Commissions	$ 25 00	Sale of property	$ 500 00
Legal	319 35		
Order of heir	902 66		
Heir	7,950 55		
Estate of Peter Wilson.			
Commissions	$ 63 84	Cash	$ 10 00
Legal	263 05	Sale of property	343 95
Repairs	56 95	Rents	923 44
Sundry accounts	100 00		
Funeral	168 50		
Taxes	375 07		
Promissory note and interest	328 68		

JAMES H. DOYLE,
Official Administrator.

COUNTY COURT, DISTRICT OF NEW WESTMINSTER.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.*		CR.—*January 1st to December 31st, 1926.*	
ESTATE OF FREDK. W. ANDREWS.			
Certificate of death	$ 50	Cash	$ 20 28
Insurance	4 70	Insurance	25 00
Transmission	6 60	Effects	35 00
Advertising	3 84	Land-sale	268 30
Legal	15 80		
Heirs	292 00		
Commission	17 42		
ESTATE OF PETER ABRAHAMSON.			
Probate duty	$ 10 75	Cash	$ 4 00
Succession duty	334 97	Rentals	42 50
Taxes	58 54	Land-sales	873 39
Insurance	21 75	Bank	503 97
Funeral	166 00		
Medical	6 00		
Merchandise	52 85		
Advertising	6 48		
Commission	70 37		
ESTATE OF HUGO ALFRED ACKERHOLM.			
		Cash	$ 12 20
		Wages	8 80
ESTATE OF MATILDA JANE ANDERSON.			
Probate duty	$ 3 25	Bank	$ 294 04
Advertising	3 24		
ESTATE OF ARTHUR BEAULIEU.			
Commission	$ 2 63		
Taxes	13 01		
ESTATE OF RICHARD BINETTE.			
Mortgage	$ 942 35	Land-sales	$1,161 00
Commission	30 90		
Heiress	200 00		
ESTATE OF THOMAS BENNETT.			
Funeral	$ 164 20	Land-sales	$ 219 25
Medical	65 00		
ESTATE OF MABEL A. BROADFOOT.			
Legal	$ 5 00	Bank	$ 202 95
Commission	10 14		
Heir	187 81		
ESTATE OF JOHN B. BRISSON.			
Probate duty	$ 7 80	Land-sales	$ 800 00
Succession duty	112 21		
Interest	6 58		
Advertising	10 08		
Legal	167 26		
Commission, etc.	40 50		
ESTATE OF REGINALD C. BROOKE.			
Transmission	$ 26 65	Bank	$31,135 79
Probate duty	442 52	Effects	13 50
Succession duty	2,836 38	Land-sales	3,034 50
Expense	24 00		
Wages	45 00		
Hospital	13 75		
Funeral	182 00		
Medical	98 00		
Advertising	62 80		
Taxes	522 20		
Merchandise	45 57		
Commissions	1,922 15		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF WILLIAM T. COTTELL.

Commission	$ 5 00	Rent	$ 100 00
Taxes	79 75		
Heir	60 00		

ESTATE OF HERBERT CRABTREE.

Taxes	$ 6 06		

ESTATE OF CHAMA.

Legal	$ 42 60		

ESTATE OF JOHN MCDONALD CAMPBELL.

Commission	$ 5 98	Land-sales	$ 140 00

ESTATE OF HARRY CLAPTON.

Legal	$ 64 22	Land-sales	$ 163 05
Commission	17 00		
Hospital	58 35		
Funeral	100 20		

ESTATE OF FRED L. CLEMONT.

Merchandise	$ 1 00	Notes	$ 329 30
Commission	17 46		
Legal	46 59		
Heir	282 81		

ESTATE OF DAVID COUTTS.

Commission	$ 22 50	Mortgage	$ 400 00
Heirs	800 00	Land-sale	226 69

ESTATE OF FREDERICK CURRIE.

Commission	$ 8 98	Tax refund	$ 1 20
Insurance	7 50		
Taxes	49 99		

ESTATE OF ALEXANDER L. CAMPBELL.

Commission	$ 23 70	Land-sales	$ 522 97
Legal	27 15		
Heirs	446 56		

ESTATE OF GEORGE B. CROSS.

		Cash	$ 5 00

ESTATE OF CHEW JUNG.

		Cash	$ 5 00

ESTATE OF LILLIAN MAY W. CALE.

Exchange	$ 15	Stocks	$ 14 75

ESTATE OF HERBERT CRUICKSHANK.

Expense	$ 90	Cash	$ 133 13
Legal	3 10	Wages	59 35
Funeral	185 75	Bank	37 29
Merchandise	28 00		
Commission	12 02		

ESTATE OF CARL CARLSON.

Funeral	$ 96 00	Bank	$ 267 16
Commission	13 60		
Legal	27 16		
Advertisement	3 60		

ESTATE OF ALEXANDER DENOON.

Transmission	$ 7 25	Land-sales	$ 500 00
Heir	382 54		
Commission	125 00		

ESTATE OF MARIE ANGE DESPRES.

Legal	$ 10 00		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of William Joseph Davey.			
Legal	$ 211 30	Rent	$ 132 50
Funeral	181 50		
Taxes	114 00		
Insurance	17 50		
Merchandise	10 00		
Expense	10 00		
Heirs	10,000 00		
Estate of William Elliott.			
Commission	$ 1 49		
Estate of Emil Eskola.			
Water rates	$ 6 25	Cash	$ 37 50
Taxes	26 91	Rent	22 50
Commission	4 10		
Insurance	6 00		
Estate of Robert Fleck.			
Mortgage	$ 806 10	Land-sales	$1,276 10
Commission	127 83		
Expense	1 18		
Heirs	450 00		
Estate of Richard Francis.			
Heirs	$3,000 00	Land-sales	$3,499 25
Taxes	72 58		
Expense	3 05		
Commission	150 00		
Estate of Daniel Ford.			
Legal	$ 3 00		
Estate of Charles R. Feedham.			
Mortgage	$1,474 50	Land-sale	$2,250 00
Insurance	3 30	Insurance	1 70
Commission	112 50	Tax refund	18 50
Taxes	70 68		
Merchandise	52 77		
Medical	98 47		
Hospital	82 10		
Legal	23 06		
Estate of William R. Falconer.			
		Cash	$ 31 71
Estate of William Fennell.			
Commission	$ 65 20	Mortgage	$ 372 90
Water	7 00	Note	160 85
Legal	526 28	Cash	20 00
Hospital	511 00		
Estate of William J. Gillespie.			
Legal	$ 17 40		
Heirs	84 38		
Estate of Rosa Greenway.			
Medical	$ 42 50	Cash	$ 151 00
Funeral	123 50	Bank	407 75
Commission	27 93		
Advertising	3 60		
Legal	50 45		
Expense	1 10		
Nurse	81 90		
Estate of Henry Goodfellow.			
Legal	$ 9 00		
Estate of William Hutchinson.			
Commission	$ 15 16		
Estate of William Hedges.			
		Effects	$ 4 00

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF FRANCIS M. HARDIE.

Commission	$ 39 82		
Heirs	504 34		

ESTATE OF R. HOLMBERG.

		Cash	$ 29 32

ESTATE OF ERNEST J. HAWKES.

Commission	$ 80 88	Effects	$ 10 00
Funeral	138 00		
Taxes	14 75		
Heirs	577 83		

ESTATE OF ARTHUR D. HINES.

Duty	$ 36 00	Cash	$ 68 34
Heir	500 00	Bank	2 13
Commission	204 52	Insurance	4,000 00
Medical	67 80		
Funeral	201 35		
Merchandise	38 51		
Legal	70 00		

ESTATE OF ROBERT JOHN HOATSON.

		Bank	$ 419 30

ESTATE OF HARRY HARDCASTLE.

		Cash	$ 21 91

ESTATE OF JOHN JAMES JONES.

Expense	$ 8 00	Interest	$ 630 00

ESTATE OF HENRY JACOBSON.

Commission	$ 2 52		
Heir	48 06		

ESTATE OF WILLIAM JUHAY.

Wages	$ 19 00	Auction	$ 227 35
Auctioneer	22 70		
Funeral	89 00		
Commission	12 11		
Advertisement	3 96		
Land payment	36 03		

ESTATE OF WILLIAM KEANE.

Heirs	$ 149 06		
Legal	10 00		

ESTATE OF PAUL KENNEDY.

Commission	$ 1 72	Wages	$ 34 49

ESTATE OF JOHN LONGO.

Taxes	$ 7 70		

ESTATE OF C. T. KEMPRUD.

		Land-sale	$1,184 42

ESTATE OF WILLIAM LAING.

Commission	$ 1 89		

ESTATE OF LOUISA LYONS.

Heirs	$ 600 00		

ESTATE OF HENRY H. LOGAN.

Commission	$ 106 27	Land-sale	$1,347 45
Taxes	129 44		
Expense	75		
Legal	300 00		
Funeral	172 50		
Medical	106 00		
Advertising	14 78		
Hospital	105 64		
Merchandise	15 00		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Roland Lockholm.			
Heir	$ 16 77		
Estate of Christian J. Leetsch.			
Taxes	$ 174 49	Land-sale	$ 560 00
Legal	50 20		
Commission	27 00		
Estate of John Larson.			
Advertising	$ 3 60	Bank	$ 49 23
Legal	39 45	Cash	3 60
Mortgage	165 00	Effects	3 00
Funeral	100 00	Land-sales	280 00
Commission	16 79		
Estate of Charlotte J. Lawrason.			
Commission	$ 63 00		
Legal	52 30		
Funeral	149 00		
Medical	110 00		
Heirs	874 38		
Estate of Laboo.			
Merchandise	$ 210 74		
Commission	59 99		
Advertising	3 36		
Estate of James Legge.			
Transmission	$ 40 80	Bank	$1,027 65
Expense	42		
Advertising	3 96		
Legal	38 30		
Merchandise	105 00		
Commission	51 53		
Estate of James Mulvey.			
Taxes	$ 38 71		
Estate of William Matthews.			
Funeral	$ 110 00	Land-sale	$ 200 00
Merchandise	30 26	Effects	2 50
Estate of Mary Mailloux.			
		Effects	$ 7 50
Estate of George H. Mitchell.			
Wages	$ 44 80	Effects	$ 311 00
Merchandise	35 25	Sale	2,100 00
Legal	97 70		
Probate duty	134 74		
Succession duty	51 20		
Commission	226 87		
Advertising	3 24		
Taxes	17 02		
Hospital	33 40		
Funeral	121 00		
Medical	160 00		
Heirs	1,412 27		
Estate of Constance G. Mosely.			
Probate duty	$ 52 92	Bank	$3,887 06
Funeral	225 00	Insurance	302 51
Medical	61 00		
Hospital	40 80		
Advertising	3 12		
Legal	55 00		
Commission	272 37		
Estate of Robert Murray.			
Expense	$ 08	Bank	$ 184 46
		Cash	6 00
Estate of Waclaw Mikietynaki.			
		Cash	$ 70

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Edward Metcalfe.			
Probate duty	$ 31 30	Cash	$ 84 80
Succession duty	11 89	Bank	207 76
Advertising	5 40		
Merchandise	50 00		
Estate of Murdoch McAllister.			
Legal	$ 20 00		
Estate of Lachlan McDonald.			
Legal	$ 135 00		
Heirs	5,288 83		
Estate of James McCormack.			
Commission	$ 2 61	Effects	$ 20 00
Estate of Donald H. McDonald.			
Expense	$ 06	Cash	$ 153 86
Commission	7 85		
Funeral	66 00		
Medical	66 80		
Hospital	13 15		
Estate of Alexander McRae.			
Legal	$ 4 00	Bank	$ 16 41
Merchandise	10 00	Cash	10 85
Commission	11 51	Effects	150 00
Estate of Daniel McColgan.			
		Cash	$ 22 81
Estate of Nishimura Masajiro.			
Heir	$ 77 62	Land-sale	$ 57 84
Estate of Ben Nelson.			
Commission	$ 23	Cash	$ 3 23
Heirs	3 00		
Estate of Nicolas Nesburg.			
Commission	$ 2 06		
Estate of Nels Olsen.			
Commission	$ 15 53	Land-sales	$ 175 66
Taxes	2 20		
Legal	96 90		
Heirs	1,835 17		
Estate of Peden M. Pederson.			
Funeral	$ 247 25		
Legal	61 50		
Commission	79 08		
Estate of Charles M. Richards.			
Commission	$ 196 91		
Estate of Singh Rawe.			
Commission	$ 8 75		
Merchandise	20 30		
Estate of James Riordan.			
Legal	$ 3 00		
Estate of Surjan Singh.			
Legal	$ 38 35	Cash	$ 623 70
Taxes	33 62	Bank	450 00
Exchange	75		
Advertising	3 84		
Commission	54 68		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of W. A. Schmidt.			
Commission	$ 2 28		
Estate of Robert Wilson Shanks.			
Legal	$ 7 00		
Heirs	166 43		
Estate of George Seaval.			
Expense	$ 6 60	Cash	$ 34 20
Estate of Y. Sang.			
Heir	$ 23 37	Cash	$ 24 75
Commission	1 38		
Estate of Harry Sandwick.			
Expense	$ 50	Cash	$ 92 98
		Bank	74 64
Estate of Alexander Wright Smith.			
Legal	$ 75 36	Land-sales	$5,500 00
Taxes	24 84		
Expense	7 88		
Commission	350 00		
Funeral	371 95		
Heirs	4,500 00		
Estate of Robert Sinclair.			
Commission	$ 43 57		
Medical	150 00		
Heir	250 00		
Taxes	16 10		
Estate of Joseph Shearer.			
Legal	$ 94 00	Succession duty refund	$ 90 89
Commission	124 54		
Merchandise	220 93		
Taxes	65 69		
Estate of Alice Thorne.			
Heirs	$1,128 00		
Estate of William Thomas.			
Taxes	$ 36 02		
Estate of Miyazaki Tozabwio.			
Mortgage	$1,029 75	Land-sale	$1,900 00
Legal	135 00		
Interpreter's fee	7 50		
Commission	95 50		
Advertising	7 80		
Medical	10 00		
Estate of Frank Thompson.			
Heir	$ 318 95	Bank	$ 351 43
Advertising	3 60		
Commission	13 98		
Legal	14 90		
Estate of James Thrift.			
Legal	$ 112 50	Cash	$ 383 14
Merchandise	28 15		
Insurance	22 50		
Medical	130 00		
Advertising	9 36		
Taxes	34 50		
Funeral	82 00		
Estate of Herman R. Tolley.			
		Cash	$ 10 00
		Sale of car	30 00

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF A. M. WALKER.

Commission	$ 3 42	Interest	$ 24 00

ESTATE OF ROBERT A. WEIR.

Legal	$ 127 00	Cash	$ 120 34

ESTATE OF SAM WONG.

Commission	$ 1 26	Wages	$ 22 30
Heir	21 04		

ESTATE OF GEORGE H. WHITE.

Heir	$ 21 63	Cash	$ 189 29
Expense	1 00		
Taxes	19 00		
Legal	18 80		

ESTATE OF JAMES WILLIAM WASSON.

Commission	$ 8 12

ESTATE OF JOHN WILSON.

Commission	$ 8 75

H. C. MAJOR,
Official Administrator.

NORTH OKANAGAN ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF JOHN BACHLEDA.

Commission	$ 35 75	Land-sales	$ 400 00
Merchandise	304 64		
Funeral	118 00		
Taxes	13 80		

ESTATE OF ANDREW JACKSON CONN.

Commission	$ 15 48	Cash	$ 10 40
Merchandise	46 90	Sale of effects	274 25
Funeral	163 39	Salary	25 00
Hospital	16 75		
Medical fees	16 00		
Blacksmithing	7 00		
Trucking and transportation	20 00		
Refund to P.O. Department	3 59		

ESTATE OF JEAN LOUIS MARIE LEVEY.

Commission	$ 37 30	Bank	$ 746 16
Merchandise	3 50		
Funeral	125 40		
Probate duty	24 80		
Succession duty	27 43		
Hospital expenses, etc.	231 70		
Advertising	4 32		

ESTATE OF ALPHONSE MOSER.

Commission	$ 10 01	Bank	$ 200 27
Funeral	100 00		

ESTATE OF ANTHONY MCWHIRTER.

Commission	$ 5 00	Land-sales	$ 100 00
Heirs	196 16		

Dr.—*January 1st to December 31st, 1926.* Cr.—*January 1st to December 31st, 1926.*

Estate of John Sanderson.

Commission	$ 1 28		

Estate of Fred R. Sweet.

Commission	$ 13 18		

D. C. TUCK,
Official Administrator.

OMINECA MINING DIVISION.

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.* Cr.—*January 1st to December 31st, 1926.*

Estate of Otis J. Benson.

Taxes	$ 9 14		
Licence	5 00		

Estate of John Barrett.

Taxes	$ 2 00		

Estate of Oscar N. Benedick.

Commission	$ 25 00	Cheque	$ 500 00
Telegrams	3 35		
Law costs	25 00		

Estate of Chas. Canning.

Commission	$ 1 36	Cash	$ 27 30

Estate of Geo. Davis.

Advertising	$ 10 08		
Law costs	77 50		

Estate of Jos. Fisher.

Commission	$ 68 78	Mining options	$ 955 57
Taxes	1 42		
Free miner's certificate	5 00		
Merchandise	150 25		
Loans	17 00		
Medical	50 00		
Hospital	27 00		
Law costs	32 23		

Estate of Nels Green.

Taxes	$ 8 35		

Estate of John Ginley.

Commission	$ 38	Cheque	$ 7 74

Estate of John Hamlett.

Commission	$ 12	Money-order	$ 2 50

Estate of Fredk. S. Jennings.

Taxes	$ 4 00	Postal order	$ 4 01

Estate of Andrew Johnson.

Commission	$ 4 00	Cash	$ 50 00
Funeral	45 00	Postal order	20 00
Registration fees	4 70		
Cartage	7 50		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Geo. H. Johnson.			
Probate duty	$ 97	Cheque	$ 85
Succession duty	13 31		
Interest on succession duty	85		
Law costs	57 90		
Taxes	9 95		
Advertising	7 00		
Registration fees	7 02		
Refund	1 50		
Estate of Peter P. Jennings.			
Funeral	$ 195 00		
Heirs	568 45		
Estate of A. McG. King.			
Commission	$ 4 25	Cash	$ 50 00
		Cheque	25 00
Estate of Borris Lobas.			
Commission	$ 6 96	Cheque	$ 99 75
Funeral	40 00		
Medical	23 81		
Hospital	37 12		
Law-stamps	2 30		
Board	29 31		
Estate of Chas. A. Lind.			
Commission	$ 12 88		
Funeral	182 00		
Merchandise	69 85		
Registration fees	8 35		
Estate of Frank Mearns.			
Commission	$ 9 37	Cheque	$ 187 55
Law costs	40 00		
Advertising	7 56		
Heirs	130 62		
Estate of Geo. McKenzie.			
Law costs	$ 51 90		
Advertising	8 12		
Estate of A. McNaught.			
Commission	$ 4 73	Cheques	$ 94 82
Estate of Chas. Pearce.			
Taxes	$ 15 70		
Estate of Nich Povich.			
Commission	$ 5 00	Land-sales	$ 100 00
Estate of Ah Pak.			
Commission	$ 95	Cash	$ 19 10
Estate of Arthur L. Ramsey.			
Commission	$ 25	Cash	$ 5 00
Taxes	5 25		
Estate of Thos. Railson.			
Commission	$ 4 08	Cheques	$ 92 00
Free miner's certificate	10 00	Cash	10 00
Estate of Maria D. Smith.			
Commission	$ 10 12	Land-sale	$ 202 50
Taxes	26 82		
Law costs	95 00		
Advertising	17 64		
Registration fees	7 80		
Labour	46 44		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF A. SCHOOLING.

Law costs	$ 8 50		

ESTATE OF M. SCANZUSA.

Commission	$ 2 25		
Medical	20 00		
Hospital	3 00		

ESTATE OF G. A. SANDBERG.

Commission	$ 15 60	Rent	$ 5 00
Advertising	12 40	Land-sale	299 50
Registration fees	5 25	Cheque	8 00
Law costs	16 00		

ESTATE OF JOW SING.

Heirs	$ 60 89		

ESTATE OF JAMES STOCKMAN.

Commission	$ 16 75	Cash	$ 335 00
Funeral	45 73		
Storage, freight	49 27		
Heirs	284 82		

ESTATE OF JOS. STUDAL.

Commission	$ 6 30	Cheques	$ 113 61
Taxes	1 35	Postal notes	11 00

ESTATE OF JAS. H. SNODGRASS.

Commission	$ 2 08	Cheques	$ 41 60
Succession duty	13 96		

ESTATE OF JONATHAN TIDMARSH.

Taxes	$ 8 45
Registration fees	16 05
Law costs	3 50
Heirs	540 08

ESTATE OF THOS. WESTGAARDE.

Commission	$ 2 55
Medical	51 00

STEPHEN H. HOSKINS,
Official Administrator.

PRINCE RUPERT ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF ANDREW ANDREWSON.

Commission	$ 6 70	Effects	$ 134 00
Lien	90 00		
Advertising	8 50		
Administration costs	2 30		
Cartage	1 00		
Funeral	25 50		

ESTATE OF HERBERT BEDORE.

Commission	$ 2 13	Cash	$ 42 64
Advertising	8 50		
Administration costs	2 30		

ESTATE OF JOSEPH BELWAY.

Commission	$ 7 20	Cash	$ 4 00
Funeral	57 65		
Gold Commissioner	10 00		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Albert Bowles.			
Commission	$ 8 01	Cash	$ 59 80
Administration costs	3 00	Boat-sale	27 50
Advertising	8 50	Bank	72 80
Funeral	90 85	Insurance	2,153 01
Legal expenses	62 05		
Estate of Erling Berg.			
Commission	$ 8 35	Cash	$ 167 09
Funeral	75 00		
Estate of Joseph Fredrick Bowman.			
Commission	$ 8 12	Cash	$ 162 45
Telegraph expenses	3 12		
Estate of Patrick John Burchall.			
Commission	$ 2 42	Cash	$ 48 67
Administration costs	2 30		
Advertising	8 50		
Estate of Thomas Carpenter.			
Funeral	$ 160 00		
Estate of Ed. Carlson.			
Commission	$ 2 08	Cash	$ 41 60
Administration costs	2 30		
Probate duty	7 81		
Estate of Patrick Condon.			
Commission	$ 7 65	Cash	$ 153 00
Cartage	1 00		
Estate of James Neil Donald.			
Commission	$ 11	Cash	$ 2 25
Estate of Alberta Daniels.			
Commission	$ 95		
Administration costs	1 00	Cash	$ 19 00
Estate of Heinrich Fersch.			
Commission	$ 5 35	Cash	$ 107 00
Estate of Hannah Frost.			
Commission	$ 23 08	Land-sales	$ 461 65
Advertising	8 50		
Administration costs	1 50		
Funeral	125 00		
Registration of land	9 25		
Cartage	24 90		
Legal expenses	57 65		
Merchandise	197 55		
Beneficiary	14 22		
Estate of Theodore Holm.			
Administration costs	$ 1 00		
Estate of Dr. E. H. T. Hyde.			
Commission	$ 25 74	Cash	$ 517 55
Safety-deposit box	5 00		
Funeral	259 95		
Estate of A. W. Healey.			
Commission	$ 6 55	Cash	$ 131 00
Estate of John Johnson.			
Commission	$ 50 00	Insurance	$1,000 00
Insurance (return)	1,000 00		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF JULIUS JAHANSAN (JOHNSON).

Commission	$ 70 00	Cash	$ 900 00
Boat expenses	65 00	Land-sales	500 00
Probate duty	14 79		
Funeral	150 00		
Legal expenses	62 35		
Advertising	8 50		
Administration costs	1 00		
Registration of land	5 50		
Merchandise	21 00		
Medical expenses	204 86		
Lien	197 00		
Beneficiaries	600 00		

ESTATE OF PETER B. JOSEPHSON.

Commission	$ 2 59	Cash	$ 46 00
		Rent	5 88

ESTATE OF JOHN LEE.

Beneficiaries	$ 33 68

ESTATE OF ALDO LAZZARROTO.

Advertising	$ 18 35
Taxes	85 51

ESTATE OF WILLIAM LANE.

Commission	$ 1 82	Cash	$ 13 00
Administration costs	2 30	Bank	23 35
Funeral	32 23		

ESTATE OF PAUL G. LUDWIG.

Commission	$ 5 74	Cash	$ 114 90

ESTATE OF RICHARD WM. MILSOM.

Legal expenses	$ 29 00
Telegraph	1 10

ESTATE OF BRUNO MAURU.

Administration costs	$ 2 30
Advertising	8 50

ESTATE OF MURDOCK MONTGOMERY.

Administration costs	$ 2 30
Advertising	8 50

ESTATE OF WILLIAM MITCHELL.

Commission	$ 8 38	Cash	$ 89 72
Telegraph	1 20	Sale of effects	28 74
		Note	50 00

ESTATE OF MURDOCH MCLEOD.

Residue	$ 25 61

ESTATE OF JOHN DONALD MCLEOD.

Probate duty	$ 3 21
Legal expenses	80 00
Advertising	8 50
Beneficiaries	213 76

ESTATE OF MURDOCH MCLEOD.

Commission	$ 1 65	Cash	$ 32 93
Administration costs	2 30		
Probate duty	1 65		

ESTATE OF GEORGE NASH.

Legal expenses	$ 65 65
Merchandise	8 65

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF AUGUST B. NORLIN.

Commission	$ 7 69	Cash	$ 139 06
		Sale of effects	15 00

ESTATE OF FRED NELSON.

Commission	$ 6 73	Cash	$ 134 90

ESTATE OF OLE OLSON.

Beneficiaries	$ 178 02

ESTATE OF THOMAS O'BRIEN.

Administration costs	$ 2 30
Advertising	8 50

ESTATE OF JULIUS OLOFSSON.

Commission	$ 2 58	Cash	$ 51 64

ESTATE OF STEFAN PODUFALY.

Beneficiaries	$1,200 00

ESTATE OF (KRISTIAN) C. PETERSEN.

Advertising	$ 8 50
Administration costs	2 30
Rental	61 72

ESTATE OF HENRY ALEXANDER REYNOLDS.

Beneficiaries	$ 400 00

ESTATE OF SOLOMON STONE.

Commission	$ 54 00	Land-sale	$1,080 00
Beneficiaries	1,109 63		

ESTATE OF VAHN E. THIESSEN.

Commission	$ 95	Cash	$ 19 05
Express charges	80		

ESTATE OF GEORGE WEST.

Commission	$ 2 17	Cash	$ 582 95
Administration costs	1 00	House-sale	47 50
Legal expenses	54 52		
Advertising	8 50		

ESTATE OF WILLIAM ST. CLAIR WILSON.

Commission	$ 1 89	Cash	$ 37 90

ESTATE OF OLE J. JENSEN.

Commission	$ 27 50	Land-sales	$ 550 45
Beneficiaries	500 00		

ESTATE OF PETER NELSON.

Commission	$ 06	Bank	$ 1 27
Taxes	19 37		

ESTATE OF JENS JORGENSEN.

Beneficiaries	$ 172 52

ESTATE OF ROBERT CORNER (CONNER).

Medical expenses	$ 20 00	Cash	$ 1 60
Taxes (Dominion Government)	22 65		
Laundry	2 95		
Lien	82 84		
Merchandise	24 59		
Funeral	11 32		

ESTATE OF DIETRICH MEYRING.

Residue	$ 106 11

Dr.—*January 1st to December 31st, 1926.* Cr.—*January 1st to December 31st, 1926.*

Estate of Roberts H. Robertson.

Commission	$ 05		
Beneficiaries	1 11		

Estate of F. G. de Mussy.

Judgment	$3,000 00		
Taxes	258 94		
Legal expenses	10 00		

NORMAN A. WATT,
Official Administrator.

REVELSTOKE ELECTORAL DISTRICT.

Return of Moneys received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.* Cr.—*January 1st to December 31st, 1926.*

Estate of Dora Brown.

Commission	$ 3 50	Bank	$ 10 17
Funeral	30 00	Sale	60 00
Merchandise	20 00		
Legal	7 80		

Estate of George T. Chapman.

Legal	$ 2 50		
Creditors	767 36		

Estate of Andrew Donati.

Commission	$ 2 84	Cash	$ 56 94
Express and telegrams	1 90		
Legal	13 50		

Estate of Harry Edwards.

Commission	$ 1 47	Cash	$ 29 40

Estate of Louis Hee.

Commission	$ 1 65	Cash	$ 33 05
Legal	13 50		

Estate of Jaron Hulyd.

Commission	$ 6 85	Cash	$ 137 00
Legal	100 00		
Creditors	979 89		

Estate of Andrew Kencheck.

Commission	$ 2 80	Cash	$ 56 00

Estate of Oscar Larson.

Commission	$ 3 58	Bank	$ 38 55
Funeral	32 50	Sale	23 05
Freight charges	2 00		
Legal	7 50		

Estate of W. J. Law.

Provincial Collector	$ 43 27		

Estate of J. Maenpaa.

Commission	$ 4 19	Cash	$ 63 96
Funeral	32 50		
Merchandise	7 35		
Legal	10 00		

Estate of Alexander McRae.

Commission	$ 13 71	Cash	$ 274 35
Legal	22 50		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF JOHN OLSON.

Commission	$ 30	Cash	$ 6 00
Funeral	5 70		

ESTATE OF CLARA ORR.

Heir	$ 178 42

ESTATE OF EMMA JANE PEABODY.

Commission	$ 5 54	Bank	$ 110 96
Legal	46 95		
Advertising	3 84		

ESTATE OF BERTHA ROUSSELL.

Commission	$ 14 06	Bank	$ 96 26
Legal	50 90	Sale	55 00
Advertising	10 80	C. E. Ellis	130 00
City Treasurer	156 00		

ESTATE OF ERIC RINNE.

Funeral	$ 12 08	Cash	$ 12 08

ESTATE OF GABRIEL SERRIANNI.

Heirs	$ 211 90

ESTATE OF O. E. STEVENS.

Legal	$ 8 56
Heir	247 09

JOHN LEE,
Official Administrator.

ROSSLAND-TRAIL ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF DAN FERGUSON.

Physician	$ 11 80	Cash	$ 41 50
D. M. Ferguson	29 70		

ESTATE OF ANNA M. GRENNY.

Solicitor's costs	$ 10 25
Advertising	11 36

ESTATE OF LEONARD GOBEY.

Taxes	$ 37 90	Cash	$ 79 75
Probate duty	860 30	C.M. & S. Co.	65 42
Succession duty	1,809 56	C.M. & S. Co., dividend	281 25
Note, Bank of Montreal	614 75	C.M. & S. Co., insurance	1,500 00
Funeral, Binns	149 00	Cash	44 27
Funeral, Standard Furniture	68 25	C.P.R. stock	1,961 39
Commission	196 60		
Advertising	8 70		
Telegrams, etc.	5 06		
Solicitor's costs	170 00		

ESTATE OF W. P. JONES.

Probate and interest	$ 36 25	Deposit on sale	$ 75 00
Broker's fees	62 55	Payments from sale	90 00
Commissions	9 65	Rents	28 00

ESTATE OF SEVERN LARSEN.

L. John Larsen	$ 75 63

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF D. J. ROSS.

Brackman & Ker	$ 94 72	Balance	$ 165 44
Trail Hospital	22 35		
Drs. Thom, Coghlin & Williams	18 97		
Dr. Coffin	13 95		
Hunter Bros., Ltd.	10 00		
Dr. C. S. Williams	3 90		
C. F. R. Pincott	1 55		

ESTATE OF JOHN SCOTTY SLOAN.

Saskatchewan Guarantee & Fidelity Co...	$ 36 00		
Donald MacDonald	100 00		

ESTATE OF JERRY SULLIVAN.

Probate duty	$ 56 69	Bank	$2,634 93
Succession duty	280 63	Bank	3,147 22
Commission	291 99	C.M. & S. Co.	57 65
Solicitor	68 56		

W. H. REID,
Official Administrator.

SIMILKAMEEN ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF JOHN RODICH.

Heirs	$ 71 20		

ESTATE OF PETER MCMAHON.

Taxes	$ 3 16		

ESTATE OF JAMES HENRY HAYES.

Legal costs	$ 38 15		
Law-stamps	1 20		
Heirs	288 93		

ESTATE OF JOHN JOSEPH TODD.

Commission	$ 16 28	Shares	$ 112 51
Heirs	500 00	Annuity	213 58
Legal	2 50		

ESTATE OF ARTHUR DEWSBURY.

Commission	$ 52 83	Bank	$ 410 10
Administration	4 70	Cash	11 21
Probate duty	11 86	Cheques	47 70
Succession duty	96 64	Rents	93 00
Cablegram	5 08	Auction	308 00
Administration	4 00	Shares	71 64
Form "X"	1 00	Motor-car	56 00
Advertising	27 72	Premium	59 00
Legal account	109 13		
Funeral	85 00		
Insurance	6 50		
Irrigation	37 50		
Taxes	60 30		

ESTATE OF JOHN CASSIDY.

Commission	$ 12 28	Cash	$ 88 10
Funeral	66 00	Bank	157 66
Legal account	35 00		
Probate duty	1 15		
Administration	3 80		
Medical	5 00		
Advertising	4 32		

W. R. DEWDNEY,
Official Administrator.

SOUTH OKANAGAN ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of John Sedgefield McFarlane.			
Commission	$ 75	V. M. Lockwood	$ 15 00
Advertising	2 88		
Estate of Annie Dale.			
Heirs	$1,088 28	R. Johnston	$1,080 11
Estate of Nagina Singh.			
Commission	$ 4 25	Black & Dunbar	$ 85 00
Transfer to County Court	241 77		
Estate of Thos. Louis G. Aitken.			
Advertising	$ 2 55	Cash	$ 11 76
Digging grave	10 00		
Furniture	43 75		
Furniture	14 57		
Medical	20 00		
Hospital	33 00		
Merchandise	107 72		
Fees	15 00		
Valuating	15 00		
Estate of Erick Petruson.			
Funeral	$ 100 00	Bank	$ 115 00
Commission	41 52	Bank	715 35
Probate duty	10 39		
Advertising	2 25		
Estate of Thos. Chas. Bustard.			
Casket	$ 95 00	Official Administrator	$ 389 39
Funeral	25 00		
Medical	25 00		
Board	58 30		
Services	15 00		
Grave, etc.	17 98		
Probate and succession duty	32 89		
Commission	19 47		
Estate of George Roberts.			
Heir	$ 95 00	Dr. E. D. Hudson	$ 200 00
Heir	95 00		

W. C. KELLEY,
Official Administrator.

COUNTY OF VANCOUVER.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of John Abraham.			
Commission	$ 17	Cash	$ 3 40
Sundry expenses	75		
Estate of Gust Anderson.			
Heirs	$1,000 00	Payment	$ 100 00
Commission	5 00		
Search of title	50		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Nels Leander Anderson.			
Freight	$ 6 00	Wages	$ 98 10
Commission	10 33	Sale	8 50
Sundries	4 45	Funeral benefit	100 00
Funeral expenses	143 00		
Estate of Rasmus Anderson.			
Petition and affidavit	$ 2 20		
Heirs	593 38		
Postage, etc.	75		
Estate of Samuel Anderson.			
Heir	$ 16 20		
Sundries	50		
Estate of Wm. Jackson Andrew.			
Hospital for Insane	$ 369 89		
Estate of Sajiro Aoki.			
Commission	$ 125 12	Sale of land	$2,114 98
Heirs	2,400 00		
Estate of Henry Appleyard.			
Commission	$ 26 09	J. R. Appleyard	$ 95 00
Sundries	75		
Taxes	19 95		
Estate of Thos. Haldie.			
Funeral	$ 81 00	Bank	$ 5 85
Commission	8 99	Funeral benefit	75 00
Hospital	86	Sale of effects	10 00
Estate of Mrs. Barlow.			
Commission	$ 34 82	Cash	$ 43 00
Vancouver City relief	32 00	Share	194 25
Legal costs	11 95	Bank	443 36
Hospital	592 26		
Advertising	2 88		
Estate of Anna Elizbeth Benson.			
Advertising	$ 4 40	Sale of land	$ 100 00
Official Guardian	1,200 00	Bank	1,560 79
Legal account	12 50		
Sundries	5 50		
Commission	83 04		
Taxes	35 05		
Transmission fees	7 75		
Repairs	69 57		
Waterworks	4 60		
Legal account	51 10		
Estate of Margaret Benson.			
Commission	$ 9 57	Sale of land	$ 191 32
Taxes	24 42		
Postage	75		
Estate of Frederick J. D. Bassett.			
Funeral	$ 75 00	Cash	$ 9 60
Commission	4 89	Sale	9 00
Sundries	3 20	Wages	79 25
Estate of Julia H. Bell.			
Sundry expenses	$ 1 42		
Estate of Emma Bible.			
Legal account	$ 5 25	Rent	$ 220 00
Taxes	51 30		
Water rates	9 60		
Blane & Co.	13 50		
Repairs	22 65		
Commission	16 75		
Legal account	40 00		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF GUS BILLOWS.

Medical account	$ 4 00
Legal account	40 00
Hospital	2 60
Funeral	50 00
Postage	75
Legal account	39 32
Legal account	23 00
Commission	3 28

ESTATE OF JAMES BIRNIE.

Jewellery	$ 18 00	Sale	$ 33 00
Commission	1 65		
Sundries	4 45		
Hospital	8 90		

ESTATE OF MRS. AGNES BROWN.

Affidavit	$ 1 20

ESTATE OF JAMES BROWN.

Commission	$ 37 75	Payment on land	$ 765 00
Sundry expense	50	Payment on land	533 77
Legal account	35 00		

ESTATE OF JOHN BRUNSKED.

Commission	$ 1 34

ESTATE OF ANDREW J. BLOOM.

Legal account	$ 101 40	Mortgage	$2,075 08
Advertising	2 80		
Heir	1,867 13		
Commission	103 75		

ESTATE OF CHARLES CAVANAUGH.

Commission	$ 50

ESTATE OF HECTOR BEATON.

Insurance	$ 44 00

ESTATE OF KLAS ALFRED BOSTRAM.

Sale of effects	$ 7 50
Cash	42

ESTATE OF H. B. CARTER.

Cartage and storage	$ 2 25	Cash and effects	$ 38 60
Rooms	22 50	Bank	329 40
Probate duty	1 82		

ESTATE OF ARTHUR A. BLAIN.

Sale of land	$ 25 00

ESTATE OF OTTO BOE.

C. F. Edwards	$ 156 50	Sale of furniture	$ 200 00
Sundries	6 30	Funeral benefit	100 00
Commission	15 30	Sale of effects	6 00
Advertising	2 80		
Probate duty	76		
Medical	62 50		

ESTATE OF FRANK E. BOWERMAN.

Taxes on land	$ 31 82	Cash	$ 73 03
Advertising	7 68	Cheque	228 65
Probate and succession duty	790 50	Bank	6,690 74
Legal account	50 80	Interest	132 48
T. Byatt	4 15		
Transmission fees	32 98		
Commission	729 93		
Heirs	5,918 00		
Legal account, Alberta	43 50		
Probate and succession duty, Alberta	396 68		
Taxes in Alberta	37 37		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Christina Boyd.			
Cartage	$ 50	Cash	$ 23 38
Funeral	268 95	Tickets	25
Funeral, Calgary	76 00	Wages	6 77
Repairs	13 50	Bank	539 46
Commission	28 49		
Sundries	75		
Advertising	2 76		
Estate of Thomas Brass.			
		Cash	$ 41
Estate of Michael A. Buckley.			
Funeral	$ 144 66	Bank	$ 1 19
Commission	14 58	Cheque	116 93
Sundries	3 45	Cash	3 17
Cartage and freight	24 45	Bank	85 38
Legal account	17 00		
Probate duty	2 53		
Estate of John Buick.			
Taxes on land	$ 11 54	Advance	$ 15
Estate of J. Burns.			
Commission	$ 82	Wages	$ 16 47
Sundries	4 75	Sale of effects	6 75
Probate duty	18		
Estate of Wm. V. Campbell.			
Commission	$ 12 02	Sale of land	$ 180 00
Sundries	75		
Estate of Duncan Cameron.			
Heirs	$ 693 05		
Estate of James C. Carey.			
		Payment of dividend	$ 1 66
Estate of Peter Carignan.			
Commission	$ 73 73	Sale of land	$ 740 52
Sundries	75		
Estate of Mrs. Violet Carr.			
		Sale of effects	$ 3 00
Estate of James Carr.			
Court order	$ 1 00	Sale of effects	$ 2 00
Estate of Francis R. Cary.			
Official Guardian	$ 459 79	Sale of land	$ 300 00
Heir	239 00		
Commission	23 75		
Sundries	75		
Estate of William Cartwright.			
Funeral account	$ 50 00	Bank	$ 209 46
Probate	98		
Advertising	3 00		
Commission	11 22		
Legal account	11 85		
Vancouver General Hospital	40 20		
Estate of John Chapman.			
Official Guardian	$ 521 20		
Heir	260 60		
Sundries	75		
Estate of Maggie Jane Chapman.			
Heir	$ 171 38		
Sundries	1 00		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of William Chapman.			
Advertising	$ 6 08	Bank	$1,130 08
Legal account	72 20	Refund	1 00
Commission	69 79	Bank	264 29
Sundries	3 00	Rent	5 00
Taxes	24 31		
Estate of Miss Edith Challinor.			
Medical	$ 5 00	Cash	$ 75 00
Commission	3 27		
Cartage	1 25		
Sundries	75		
Estate of Edward George Charles.			
Examination of effects	$ 2 08	Bank	$ 2 08
Estate of T. C. Connor.			
Examination of effects and cartage	$ 2 00	Sale of effects	$ 2 00
Estate of Thos. Collins.			
Search	$ 50		
Estate of Adelaide Collins.			
Taxes	$ 46 88	Sale of land	$ 43 30
Commission	2 42		
Estate of George Coon.			
Commission	$ 3 36		
Estate of James Cranston.			
Commission	$ 8 75	Dividends	$ 39 90
Exchange	1 20		
Estate of Mary Catherine Cleary.			
Taxes	$ 68 91	T. Edwards, advance	$ 68 91
Estate of Allan Crawford.			
Funeral account	$ 294 00	Cash	$ 35 85
Legal account	23 25	Compensation Board	292 60
Commission	62 42	Sale of effects	7 50
Sundries	2 95	Wages	6 80
Probate duty	47 24	Bank	905 58
Advertising	5 60		
Estate of Giovachino Cristante.			
Sundries	$ 2 25	Refund	$ 2 25
Probate duty	9 83	Sale of effects	13 00
Legal account	10 25	Wages	120 80
Sun	4 84	Cheque	108 62
Funeral account	180 00	Bank	926 45
Commission	58 55		
Dominion income-tax	67 65		
Estate of Gustaf Crown.			
Funeral account	$ 148 50	Cash	$ 8 60
Probate duty	2 27	Bank	171 97
Commission	9 03		
Sundries	75		
Estate of Thos. D. Cumming.			
Commission	$ 16 05	Rent	$ 12 00
Sundries	1 75		
Estate of John Currell.			
Commission	$ 47 50	Payment on land	$ 900 00
Sundries	50		
Heirs	1,032 20		
Estate of Hannah Davies.			
Commission	$ 1 34		
Taxes	17 34		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF MANE D. CVETKOVICH.

Probate duty	$ 39 56	Cash	$ 20 00
Wm. D. Carter & Co.	60 40	Dividend	15 00
Sundries	6 75	Bank	2,982 88
Taxes	30 50	Wages	98 42
Commission	211 01	Funeral benefit	70 49
Advertising	11 40	B.C.E. shares	1,033 32
Art Monument Co.	55 00		
Funeral account	239 40		
Dominion income-tax	53 10		

ESTATE OF HELENA DAVIS.

A. C. Hawbolt	$ 2 00	Sewing-machine	$ 12 00
Commission	26 35	Sale of effects	3 00
Sundries	75	Sale of land	512 25
Rent, etc.	74 30		
Legal account	423 85		

ESTATE OF KHAIR DEEN.

Commission	$ 22 37	Suitors' Fund	$ 447 42
Sundries	2 06		

ESTATE OF HERBERT WM. DAW.

Surgical	$ 25 00	Express orders	$ 144 60
Funeral	197 00	Bank	152 73
Advertising	2 80	Insurance	933 58
Flowers	20 00	Pension	18 97
Nursing	5 00		
Legal account	56 50		
Probate and succession duty	218 51		
Medical	10 00		
Hospital	128 85		
Medical	25 00		
Medical	225 00		
Sundries	3 00		
Commission	62 50		
Interest on succession duty	6 27		
Administrator in England	264 45		

ESTATE OF E. M. DEITZE.

Commission	$ 1 00		

ESTATE OF MRS. ALICE ROSE DEFENBROCK.

Commission	$ 7 30	Bank deposit	$ 146 00
Affidavits and orders	5 20		
Postage	75		
Funeral	132 75		

ESTATE OF FRED DESOURDI.

Cartage and examining effects	$ 2 67	Sale of effects	$ 1 00
		Cash	1 67

ESTATE OF MRS. DORA MAY DIRASSER.

Refund	$ 252 30	Fank	$ 280 22
Probate duty	16		
Commission	22 31		

ESTATE OF ROBERT DOCHERTY.

B.C.E. light bill	$ 1 22	Cash	$ 5 00
Legal	20 00	Bank	33 33
Sundries	6 25	Sale of effects	20 50
Funeral	127 00	Refund	3 00
Petition and affidavits	6 50	Insurance	301 07
Commission	18 15		

ESTATE OF MISS ROSA DELL DODGE.

Probate and succession duty	$ 21 08	W. D. S. Rorison	$ 128 25
Sun	3 00		
Legal	14 20		
Commission	6 41		
Sundries	75		

ESTATE OF MRS. LIZZIE DONN.

Official guardian	$ 79 01		
Sundries	75		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF JAMES L. DONN.

School account	$ 3 45		
Sundries	75		
Official Guardian	310 64		
School account	5 85		

ESTATE OF WM. ALEXANDER DOUGAN.

Taxes on land	$ 3 15		

ESTATE OF CYRIL DOVE.

Advertising	$ 2 80	Bank	$ 28 15
Probate duty	1 81		
Legal	21 38		
Commission	1 41		
Sundries	75		

ESTATE OF EDMUND DOW.

Taxes on land	$ 4 98		
Commission	4 29		

ESTATE OF ANDREW DICKSON.

Probate duty	$ 2 00		
F. J. Orr	156 55		

ESTATE OF JAMES DUFF.

Commission	$ 6 20	Cash	$ 9 66
Sundries	4 45	Sale of effects	12 50
Funeral	75 00	Bank	100 85
		G. F. Williams	4 00

ESTATE OF M. DUGGAN.

Commission	$ 8 91	Bank	$ 178 16
Notary	1 00		
Sundries	5 95		
Funeral	92 00		
Hospital	70 30		

ESTATE OF AARON DUNNING.

		Sale of effects	$ 12 50
		Sale of tools	2 50

ESTATE OF RODERICK DUNN.

Sundries	$ 7 60	Cash	$ 58
Probate and succession duty	22 77	Bank	143 10
Funeral	168 25	Wages	59 92
Legal	40 00	Sale of effects	24 00
Advertising	2 80	Funeral benefit	100 00
Commission	70 34	Insurance	1,094 96
		Refund	42 34

ESTATE OF ERNEST EDWARD DYER.

Commission	$ 15 18	Payment on land	$ 293 60
Heirs	1,908 69		

ESTATE OF ERNEST ALFRED DAVY.

Sundries	$ 2 25	Effects	$ 24 00
Commission	1 20		

ESTATE OF ALEXANDER DOUGLAS.

Transfer charges	$ 75	Wages	$ 200 00
Care of deceased	10 00	Cash	25
Hospital	6 50	Effects	31 00
Merchandise	1 10		
Medical	40 00		

ESTATE OF REGINALD R. EAGER.

Taxes	$ 19 95	Mortgage	$ 42 00
Water rates	5 80	A. G. Stuart	160 00
Insurance	60 00	E. J. Kay	3,955 00
Commission	207 75		
Mrs. J. H. Babcock	150 00		
Legal	20 50		
Official Guardian	4,300 00		
Sundries	1 00		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Archibald Edgar.			
Marker for grave	$ 60 00	L. R. Steele Trust	$ 7 72
Heirs	2,000 00		
Postage	75		
Taxes	35 00		
Taxes	157 12		
Commission	39		
Estate of Wm. George Ellis.			
Sundries	$ 5 46	Cash	$ 3 68
Commission	1 16	Share in estate	16 05
Hospital	16 61	B. Wolfe	3 50
Estate of James Emmott.			
Taxes	$ 36 60	E. Wood	$ 30 00
Water rates	13 20	Rent	60 00
House repairs	85 40		
Guardian	140 00		
Commission	10 75		
Estate of Mrs. Alice Emmott.			
Commission	$ 19 14	Insurance	$ 382 71
Guardian	775 00		
Estate of Joseph Etchells.			
		Bank	$ 6 28
Estate of Henry S. Falconer.			
		Sale of effects	$ 2 00
Estate of Peter Fabris.			
Funeral	$ 153 50	Bank	$ 95 20
A. C. Hawbolt	10 00	Cash	21 00
Sundries	4 45	Sale of boats and cabin	150 00
Legal	23 00		
Advertising	15 60		
Commission	13 31		
Estate of Ed. P. Fellows.			
Trustee under will	$2,262 87	Rent	$ 108 00
Commission	134 34	Sale of land	2,489 78
Water rates	19 80	Odlum, Ltd.	17 00
Taxes on land	242 14		
Legal	224 36		
Postage, etc.	75		
Estate of John D. Finlayson.			
Commission	$ 46 84	Cheques	$ 928 80
Sundries	5 95	Bank	7 96
Cartage and storage	24 55		
Probate duty	6 86		
Telegram	1 92		
Funeral	276 00		
Legal	19 50		
Advertising	2 80		
Estate of Miles Fitzgerald.			
Probate duty	$ 7 22	Bank	$ 1 00
Sundries	3 70		
Estate of Robert Fraser.			
Funeral	$ 50 00	Cash	$ 62 70
Medical	5 00	Sale of effects	4 00
Probate duty	28		
Commission	3 33		
Sundries	75		
Estate of Chas. Fricker.			
Sundries	$ 3 10	Cash	$ 109 25
Funeral	95 00	Sale of effects	6 50
Commission	5 51		
Estate of Francisco Frescatore.			
Commission	$ 30		

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ESTATE OF ARCHIBALD REID GAULD.

Star Loan Co.	$ 5 25	Sale of effects	$ 5 00
Commission	3 24	Wages	39 23
Sundries	5 55	Cash	13
Funeral	30 77	Bank	45

ESTATE OF LAURA JANE GEISER.

Commission	$ 6 50	Refund	$ 79 66
Grave	35 00	Payment on lot	130 00
Heirs	500 00		

ESTATE OF HAYDEN M. GAYLORD.

Affidavit	$ 1 20
Probate and succession duty	555 32
Interest	61 90
Heirs	331 08

ESTATE OF JAMES ADAM GILLAM.

Commission	$ 10 00
Court order	1 50
McTaggart & Ellis	5 00

ESTATE OF GEORGE H. GRAHAM.

Commission	$ 32 10	Payment on land	$ 642 00
Sundries	75		
Heir	304 58		
Heir	2,917 10		
Legal	25 30		
Heir	3,012 53		

ESTATE OF JULIUS GREEN.

Commission	$ 13 89	Bank	$ 252 37
Advertising	2 80	T. Edwards	20 00
Legal	22 90	Cash	33
Order	1 50	Effects	5 00
Sundries	75		
Funeral	235 86		

ESTATE OF JAMES G. GODY.

Commission	$ 55	Sale of effects	$ 10 00

ESTATE OF PHILIP GUITE.

Funeral	$ 331 75	Sale of effects	$ 28 00
Probate duty	9 35	Wages	52 42
Legal	22 80	Bank	1,218 05
Advertising	6 72	Cash	5 04
Shipment of body	313 98	Funeral benefit	100 00
Commission	78 92		

ESTATE OF FREDERICK GROVES.

Heir	$2,796 41

ESTATE OF GEORGE GULLIVAN.

Probate and succession duty	$ 31 56	Sale of shack and boat	$ 650 00
Legal	13 25	Wages	11 63
Advertising	6 72	Bank	1,134 35
Telegram	2 34		
Commission	32 50		
Commission	89 22		

ESTATE OF JOSEPH HADFIELD.

Sundries	$ 2 95	Refund	$ 393 47
Commission	51 48	Interest	94 50
Heirs	1,110 00	Mortgage	307 25
Income-tax	93 00		
Sundry expenses	5 00		

ESTATE OF VICTOR DENYS HART.

Advertising	$ 2 80	Wages	$ 30 31
Commission	7 35	Bank	116 71
Sundries	4 45		
Grave	45 50		
Funeral	80 40		

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Estate of Beecham Scarf Hammond.			
Hospital	$ 9 00	Cash	$ 45 00
Funeral	267 50	Bank	7,829 48
Grave	45 50		
Probate and succession duty	543 31		
Medical	75 00		
Commission	393 72		
Legal	55 00		
Advertising	6 00		
Travelling expenses	400 00		
Sundries	2 25		
Estate of Charles Harris.			
Commission	$ 40		
Estate of Ginzon Hara.			
Commission	$ 25 00	Cash	$ 1 55
Sundry expenses	2 36		
Launch	14 00		
Commission	50 00		
Hotel charges	40 20		
Funeral	145 90		
Probate duty	15 37		
Legal	43 20		
Estate of Delphia Hawes.			
Medical	$ 50 00	Interest	$ 36 12
Funeral	100 00	P.G. Eastern stock	497 86
Probate duty	90		
Legal	32 95		
Commission	26 70		
Sundry expenses	2 95		
Board and room	301 00		
Estate of John Hedman.			
A. C. Hawbolt	$ 7 50	Cash	$ 60 20
Commission	8 01	Sale of shack	100 00
Sundries	4 45	Sale of effects	10 00
Funeral	53 50		
Estate of Helmik Helmikson.			
Rent	$ 4 00	Sale of effects	$ 7 50
Probate duty	12 32	Bank	411 50
Medical	9 00	Cash	10 48
Commission	21 47		
Sundries	75		
Funeral	170 50		
Advertising	3 00		
Estate of William Hennan.			
Taxes on land	$ 80 30	Refund	$ 88
Commission	9 90	Sale of land	145 00
Sundry expenses	2 00		
Estate of George Hirsh.			
Commission	$ 55		
Estate of Mathew Houlahan.			
Commission	$ 34 81	Sale of land	$ 696 13
Sundries	75		
Estate of Erik Holm.			
Probate duty	$ 7 91	Sale of effects	$ 6 00
Advertising	2 80	Wages	197 36
Rent and cash	45 00		
Sundries	6 15		
Commission	10 17		
Estate of James Hogan.			
Commission	$ 17 85	Wages	$ 320 35
Sundries	8 30	Express order	45
Probate duty	15 35	Bank	34 30
Advertising	2 52	Sale of effects	2 00
Legal	12 00		
Loan	50 00		

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ESTATE OF JUSTUS HOWISON.

Taxes on land	$ 34 40		

ESTATE OF EDWARD JOSEPH HUNT.

Taxes on land	$ 38 67	Sale of land	$ 260 98
Commission	13 05		
Sundries	7 95		
Drawing agreement	2 50		

ESTATE OF GILBERT ROY HUNTER.

Cleaner	$ 2 00	H. Hunter	$ 26 00
		Wages	95 20

ESTATE OF DANIEL HURLEY.

Commission	$ 74 09	Cash	$ 114 50
Sundries	6 00	Tools	20 50
Grave	30 50	Bank	1,360 71
Probate and succession duty	34 70		
Funeral	219 50		
Petition	9 00		
Legal	12 85		
Medical	150 00		
Advertising	2 80		

ESTATE OF KIN HEW JONG.

Funeral	$ 59 00	Cash	$ 61 50
Hospital	10 25	Jim Kee	22 00
Medical	6 00		
Commission	4 17		
Sundries	4 08		

ESTATE OF EDWARD PHILIP KING.

Funeral	$ 45 00	Bank	$ 55 08
Commission and sundries	6 70	E. A. King	64 00
Petition and affidavits	3 70		
Funeral	63 68		

ESTATE OF JOHN KUUSELA.

Sundries	$ 73		
Heirs	163 00		

ESTATE OF WALTER JACKETT.

Dr. Lowrie	$ 17 00	Cash	$ 3 50
Funeral	180 00	Sale of car	150 00
Commission	15 72	Bank	160 88
Sundries	75		
Medical	50 00		
Board	9 00		

ESTATE OF MABEL JAMIESON.

F. G. Walmsley	$ 8 00	Sale of land	$ 229 00
Official Guardian	325 00		
Commission	8 28		
Sundries	75		

ESTATE OF ANDY OR AUBIN JOHNSON.

Medical	$ 5 00	Sale of effects	$ 8 50
Probate duty	45	Cash	73 50
Hospital	2 00	Bank	33 99
Funeral	100 00		

ESTATE OF C. JOHNSON.

Commission	$ 7 62	Wages	$ 27 47
Probate duty	1 81	Bank	152 31

ESTATE OF THEODORE JOHNSON.

Commission	$ 12 28	Bank	$ 156 59

ESTATE OF GOTTFRID JOHANSSON.

Express	$ 75	Sale of effects	$ 3 00

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of James Johnston.			
Probate and succession duties	$ 39 44	Cash	$ 13 35
Funeral	148 50	Sale of effects	14 50
Commission	115 82	Bank	2,124 49
Legal	35 00		
Advertising	8 00		
Estate of Joseph Johnston.			
Heirs	$ 170 85		
Estate of Thomas Jones.			
J. A. Fraser	$ 20 00	Mining claim	$ 200 00
J. Stokes	45 00		
Commission	10 00		
Sundries	2 75		
Estate of Karl Leonard Jonsson.			
Cartage	$ 5 95	Cash	$ 1 20
Sundries	5 45	Sale of effects	8 00
Commission	4 24	Bank	75 55
Estate of Gustav A. Karzoninkat.			
Taxes	$ 15 00		
Estate of Walter C. Keeling.			
Commission	$ 63 60	Cash	$ 110 60
Legal	11 75	Sale of effects	60 50
Probate and succession duty	34 84	Insurance	1,086 00
Funeral	270 75	F. B. Lewis & Co.	4 52
Hotel	54 35		
Affidavits	6 50		
Sundries	3 00		
"Sun"	5 28		
Estate of Isaac Keranen.			
Commission	$ 27 01	Rent	$ 215 30
Petition and order	8 75	Sale of land	300 00
Advertising	2 88	Sale of books	25 00
Legal	13 85		
Taxes	34 55		
Services	9 10		
Water rates	5 60		
Estate of Tadaichi Kimura.			
Commission	$ 3 49	Wages	$ 69 82
Sundries	75		
Heiress	691 76		
Estate of Miss Elizabeth Kirkwood.			
Probate and succession duty	$ 22 05	Bank	$ 955 69
Commission	47 73		
Sundries	75		
Advertising	6 60		
Estate of Worthington B. Jennison.			
Nursing	$ 50 00	Sale of land	$ 124 20
Services	50 00	Bank deposits	5 00
Commission	6 48		
Estate of Frederick Johns.			
Funeral	$ 8 55	Cash	$ 11 76
Commission	3 94	Sale of effects	5 50
Sundry expenses	40		
Estate of Archibald Kennedy.			
Legal	$ 231 19	Rivers Logging Co.	$ 225 00
Commission	11 25		
Estate of Mrs. Elizabeth Ann Kerr.			
Affidavit	$ 1 20		

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Estate of Charles E. Knight.			
Probate duty	$ 1 43	Sale of effects	$ 5 50
Advertising	3 30	R. Baird	58 43
Funeral	107 75	Insurance	287 40
Commission	22 57	Funeral benefit	100 00
Legal	18 60		
Provincial Mental Hospital	87 76		
Estate of Thomas John Knox.			
Funeral	$ 190 80	Sale of effects	$ 24 00
Commission	56 31	Wages	166 67
Sundries	75	Funeral benefit	100 00
Probate duty	42 57	Bank	835 62
Advertising	5 50		
Estate of Henry Kosky.			
Heir	$ 50 00	Sale of land	$ 222 80
Commission	16 14	Sale of effects	2 50
Sundries	75		
Heirs	305 18		
Estate of Wesley G. Kuntz.			
Sundries	$ 78		
Heirs	778 00		
Estate of Martin I. Lane.			
Commission	$ 16 58	Cash	$ 11 46
Sundries	75	Sale of effects	20 75
Funeral	157 50	Bank	299 45
Hospital	43 00		
Medical	20 00		
Probate duty	1 02		
Estate of Matt Lamb.			
Henry Matson	$ 44 20		
Heirs	265 22		
Estate of Mike Laboso.			
Probate duty	$ 05		
Estate of Torsten L. Lantz.			
Postage	$ 75		
Heirs	15 22		
Estate of Alfred Lawther.			
Heir	$ 419 20		
Sundries	75		
Heirs	10 05		
Estate of A. Larson.			
Cartage	$ 75	Bank	$ 84
		Sale of effects	50
Estate of Charles C. Leary.			
Legal	$ 23 10	Sale of land	$ 229 54
Commission	28 40	Cash	9 80
Hospital	11 00	Bank	350 49
Taxes on land	12 60		
Succession duty	22 13		
Medical	25 00		
Funeral	228 50		
A. C. Hawbolt	25 00		
Affidavits	11 00		
Advertising	9 00		
Sundries	3 75		
Land Registry Office	11 50		
Estate of Eugene B. Leddy.			
Commission	$ 2 69	Cash	53 75
Affidavits	3 70		
Sundries	75		
Funeral	46 61		

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ESTATE OF VICTOR LILJEDAL.

		Cash	$ 18
		Sale of effects	10 00

ESTATE OF ALFRED LLOYD.

Commission	$ 1 04	Deposit	$ 5 73
Heirs	97 42		
Sundry expenses	3 13		

ESTATE OF LOCK WING.

Commission	$ 2 97	Cash	$ 59 37
Funeral	46 95		
Hospital	4 50		
Commission	50		
Sundries	75		

ESTATE OF EDWARD LOFGREN.

Commission	$ 56

ESTATE OF CHARLES C. LYON.

Medical	$ 49 26

ESTATE OF LOU GIT SAM.

Commission	$ 7 73	Bank	$ 154 55
Sundries	75		
Missionary Sisters	10 50		
Medical	21 67		
Nursing	2 20		
Funeral	92 00		
Hospital	16 00		

ESTATE OF JOHN LUSTILA.

Commission	$ 25 33	Bank	$ 506 58
Hospital	18 00		
Coffin	9 50		
Advertising	5 06		
Postage	75		

ESTATE OF WM. JOHN LOVELOCK.

Rooms	$ 16 45	Sale of effects	$ 1 00
Rent	11 00	Bank	25 30
Monument	434 00	Insurance	522 44
Advertising	6 40	Funeral benefit	521 29
Commission	59 82	Refund	100 00
Sundry expenses	6 95	Commission	6 32
Probate duty	48 75		
Succession duty	25 53		
Funeral	389 00		

ESTATE OF JAMES LOWRY.

Heir	$ 18 00	Cash	$ 18 00

ESTATE OF CARL MALMBERG.

Commission	$ 27 58	Cash	$ 13 18
Sundries	75	Wages	79 38
Funeral	185 50	Bank	459 10
Medical	175 00		
Hospital	10 85		
Advertising	4 84		
Legal	13 50		

ESTATE OF STEFAN MALOWNEY.

Sundries	$ 75
Medical	33 58
Hospital	46 00

ESTATE OF FRANS MANFOLK.

Funeral	$ 171 00	Wages	$ 47 22
Commission	12 99	Cash	1 10
Sundries	2 70	Sale of effects	10 00
		Bank	201 50

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Estate of Peter Marsulia.			
Taxes	$ 171 63	Sale of boat	$ 200 00
Mortgage interest	51 00	Rent	78 35
Legal	25 75	Shack	65 00
Commission	13 92		
Advertising	5 50		
Estate of J. F. Maguire.			
		Bank	$ 22 39
Estate of George Marr.			
Taxes	$ 110 76	Sale of land	$ 754 25
Corporation of West Vancouver	81 00	Refund	24 21
Hospital	2 50		
Funeral	135 00		
Commission	37 71		
Sundries	75		
D. Morgan	37 50		
Advertising	7 04		
Estate of Lewis Martin.			
Taxes	$ 16 62		
Estate of Ole Martinson.			
Advertising	$ 5 60	Wages	$ 38 29
Commission	4 47	Bank	41 28
Sundries	7 30	Refund	2 80
Heirs	65 00		
Estate of Giovanni del Mauro.			
Sundries	$ 57		
Heirs	693 00		
Estate of Swan Miller.			
Probate duty	$ 22 21	Sale of effects	$ 10 50
Succession duty	43 97	Bank	2,666 41
Nursing	35 00		
Nursing	5 00		
Nursing	40 00		
Hospital	53 55		
Funeral	446 00		
Medical	35 00		
Advertising	4 60		
Legal	50 00		
Commission	136 57		
Sundry expenses	4 20		
Estate of Michael Misik.			
Commission	$ 1 43	Bank	$ 20 11
Sundries	75		
Estate of John H. Miller.			
Probate duty	$ 3 04	Cash and wages	$ 62 87
Commission	15 29	Bank	203 00
Affidavits	8 00		
Sundries	1 90		
Legal	12 75		
Estate of Henry Mitchell.			
		Cash	$ 7 00
		Effects	8 50
Estate of W. Mikietynski.			
Certificate of death	$ 75	Bank	$ 1 85
Sundries	40		
Official Administrator, New Westminster	70		
Estate of John D. Mills.			
Transmission fees	$ 18 55	Rent	$ 168 00
Legal	80 00	Sale of land	1,620 53
Taxes	262 63		
Advertising	2 40		
Commission	99 03		
Sundries	2 03		
Commission	80 00		
Heirs	1,359 25		

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ESTATE OF MATTHEW MOLLOY.

Commission	$ 4 97	Sale of land	$ 79 40
Rent	92 52		

ESTATE OF MRS. MARY MORAN.

Legal account	$ 14 30	Sale of land	$ 350 00
Grave	45 50		
Funeral	244 00		
Commission	17 50		
Sundries	3 75		

ESTATE OF HERBERT EUGENE MORRILL.

Commission	$ 201 69	Bank	$1,973 75
Affidavits	6 50	Wages	126 30
Sundries	6 01	Assurance	1,512 13
Shipping body	42 60	Funeral benefit	75 00
Probate duty	36 68		
Medical	100 00		
Hospital	18 50		
Funeral	278 05		
Heir	500 00		
Legal	28 75		
Income-tax	8 72		
Sundries	2 76		

ESTATE OF NICOMEDES LOPEZ MURIEL.

Taxes	$ 10 92

ESTATE OF HIDEKAGE MUROTA.

Funeral	$ 150 00	Bank	$1,053 00
Commission	52 65		
Sundry expenses	2 50		
Probate duty	7 86		
Advertising	2 80		
Medical	15 00		
General Hospital	2 00		
Masonori Yamada	23 50		
Kusuki Takaki	40 00		
Susuki Ikasaki & Rize	99 85		
J. A. Russell	40 65		
Japanese Consul, for heirs	616 19		

ESTATE OF JOHN MURPHY.

Launch repairs	$ 53 58	Sale of boat	$ 150 00
Search for body	98 99	Personal effects	33 00
Grave-digging	3 50	Postal note	68
Commission	9 18		
Sundries	4 45		

ESTATE OF MICHAEL MURPHY.

Commission	$ 5 60	Sale of land	$ 112 00
Sundries	75		

ESTATE OF PATRICK MURPHY.

Sundries	$ 6 23	Cash	$ 21 75
Medical	140 00	Bank	694 75
Hospital	112 75		
Funeral and grave	178 00		
Commission	35 82		
J. M. Coady	15 00		

ESTATE OF JOHN IRVINE MURRAY.

Hospital	$ 15 20	Cash and effects	$ 382 99
Commission	18 35		
Sundries	75		
Funeral	212 75		
Medical	115 00		

ESTATE OF RICHARD MURRY.

Freight	$ 4 00	Cash and effects	$ 47 86
		Funeral benefit	100 00

ESTATE OF JACOB MOEN.

Funeral	$ 5 25

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Estate of C. W. McArthur.			
Loan	$ 18 40	Cash	$ 19 05
Sundries	2 25	Effects	10 00
Estate of Harry A. McAulay.			
Commission	$ 88		
Estate of James H. McCall.			
Insurance	$ 7 42	Refund	$ 285 67
Advertising	9 80	Refund	750 65
Judgment	5 00	Sale of land	2,500 44
Mortgage	2,121 61		
Taxes	766 45		
Insurance	6 75		
A. E. Austin	190 00		
Commission	175 08		
Sundries	2 05		
Estate of A. Macdonald.			
Administrator, Ashcroft	$ 37 31	Wages	$ 37 31
Estate of Duncan McDonald.			
Commission	$ 1 40		
Estate of Lachlan McDonald.			
Affidavits	$ 7 50	Cash and effects	$ 15 65
Sundries	3 75	Bank	4,701 69
Advertising	7 68	Interest	55 00
Funeral and grave	245 50		
Probate and succession duty	637 42		
Commission	238 62		
Legal	55 00		
Estate of Hugh McDonald.			
Taxes	$ 7 95	Sale of land	$ 53 95
Commission	7 50		
Transmission fee	8 50		
Commission	2 67		
Sundries	75		
Estate of Duncan McDougall.			
Taxes	$ 28 00	Sale of land	$ 562 40
Commission	128 86		
Estate of Patrick McGettigan.			
Commission	$ 7 19	Wages	$ 143 81
Legal	11 75		
Heir	117 62		
Estate of David McKay.			
Commission	$ 166 16	Cash and effects	$ 19 49
Affidavits	9 50	Bank	3,062 25
Legal	37 60	Annuities	241 30
Funeral	308 75	Refund	2 75
Grave	45 00		
Probate and succession duty	146 04		
Advertising	2 80		
Taxes	2 75		
Medical	3 00		
Sundries	75		
Estate of P. W. McKean.			
		Bank	$ 3 00
Estate of Miss Mary McKenzie.			
Commission	$ 7 60	Cash	$ 152 00
Hospital	2 00		
Sundries	1 50		
Estate of Miss Isabel McKinnon.			
Commission	$ 85		

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Estate of Malcolm McKinnon.			
Legal	$ 15 00	Sale of land	$1,205 20
Advertising	2 64		
Water	6 00		
Taxes	60 20		
Legal	20 00		
Commission	60 00		
Commission	61 01		
Estate of Alexander McLaren.			
Commission	$ 67 15		
Estate of Hugh S. McLean.			
Advertising	$ 2 80	Sale of land	$ 248 75
Legal	19 40		
Commission	12 50		
Estate of Hugh G. McPhatter.			
L.R.O. fee	$ 1 00		
Water rates	9 60		
Estate of Norman McPherson.			
Funeral	$ 1 00	Effects	$ 22 00
Estate of Daniel Norris.			
Heirs	$1,750 00	John P. Mills	$ 15 20
Commission	38 35	Interest	212 50
Sundries	2 00	Mortgage	643 79
Heir	785 00		
Estate of Johan D. Normark.			
Heirs	$ 212 71	Sale of effects	$ 2 00
Commission	3 48	Compensation Board	69 70
Estate of Oluf Olsen.			
Affidavit	$ 1 20	Refund	$ 81 01
Estate of Fred Lund Olsen.			
Commission	$ 15 55	Cash	$ 11 00
Advertising	3 00	Ed. Lipsett	300 00
Postage	75		
Estate of Farquar D. Nicholson.			
Postage	$ 77		
Heirs	30 66		
Estate of Karl Olson.			
Cartage	$ 2 00	Sale of effects	$ 2 00
Order	1 00	Bank	1 00
Estate of Leo Perry.			
Cartage	$ 75	Sale of effects	$ 14 00
Estate of Charles O'Donnell.			
Commission	$ 5 53	Cash	$ 22 11
Freight and cartage	90	Bank	90 60
Estate of Albert G. Pascoe.			
Commission	$ 10 19	Rent	$ 76 05
Taxes	74 78		
Water rates	3 60		
Sundries	75		
Estate of A. F. Pearson.			
Income-tax	$ 67 40		
Sundries	92		
Heirs	1,290 96		

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ESTATE OF ALFRED PEARSON.

Funeral	$ 89 50	Sale of land	$ 95 60
Commission	4 78		
Sundries	88		
Petition and affidavits	4 00		

ESTATE OF J. S. PERRY-GORE.

Commission	$ 3 40	Wages	$ 14 92
Sundries	75	Bank	53 00
Funeral	60 07		

ESTATE OF JOHN PETERSON.

Taxes	$ 17 35

ESTATE OF JOHN PETERSSON.

Taxes	$ 10 32
Safety-box	6 50

ESTATE OF ALEX. PHILLIP.

Disposing of effects	$ 2 18	Cash	$ 2 18

ESTATE OF JAMES PETRIE.

Commission	$ 17 84	Wages	$ 356 78
Probate duty	3 56	Bank	1 38
Affidavits	7 50		
Advertising	2 76		
Legal	25 10		
Postage	75		

ESTATE OF ROBERT WALTER PINCHON.

Funeral	$ 334 00	Cash	$ 31 53
Commission	255 43	Bank	4,017 15
Sundries	3 45	Sale of contents of shop	50 00
B.C. Electric	2 00	Ten B.C.E. shares	1,010 00
Legal	37 05		
Income tax	18 00		
Probate duty	48 41		
Advertising	5 60		
Heirs	4,354 74		
Grave	50 00		

ESTATE OF FRANCIS J. RAINE.

Commission	$ 13 06	Rents	$ 706 65
Repairs	118 62		
Taxes	249 72		
Postage	75		

ESTATE OF WM. J. RAWLINGS.

Waterworks	$ 16 80	Rent	$ 396 00
Taxes	161 42		
Commission	37 71		
Postage	75		

ESTATE OF HENRY RANKIN.

Commission	$ 8 17	Kettle Valley Railway	$ 163 43
Sundry expenses	2 20		
Funeral	153 06		

ESTATE OF EDMUND L. REID.

Probate duty	$ 3 43	Cash	$ 25 18
Legal	26 70	Sale of effects	9 00
Funeral	191 00	Bank	309 67
Rent	82 00		
Commission	17 19		
Sundries	3 95		
Advertising	2 80		

ESTATE OF ERNEST RING.

Commission	$ 7 20	Cash and effects	$ 16 00
Postage	75	Wages	57 35
		Bank	70 70

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF JOHN ROSS.

Probate and succession duty	$ 24 60	Cash	$ 34 08
Hospital	231 15	Money-order	25 00
Medical	25 00	Bonds	1,054 17
Legal	27 05	Annuities	50 00
Advertising	4 20	Bank	87 24
Commission	61 62		
Sundries	3 70		
Notary	4 00		
Crown-grant fee	10 00		
Taxes	3 50		

ESTATE OF TALU RHAM.

Postage	$ 75
Dhanu	246 26

ESTATE OF J. ROGERS.

Commission	$ 10	Sale of effects	$ 2 00
Freight and cartage	1 05		

ESTATE OF HUGH ROSE.

Taxes on land	$ 12 09

ESTATE OF H. E. RANTATALA.

Cartage	$ 4 00	Sale of effects	$ 5 00
Commission	9 20	Wages	179 01
Sundries	75		

ESTATE OF ALEXANDER ROSS.

Mortgage interest	$ 40 00	Cash and effects	$ 145 15
Commission	6 76	Rent	114 00
Hospital	53 50	Sale of land	100 00
Kitsilano Co.	63 60		
Merchandise	24 26		
Scavenging	2 00		
Sundries	1 50		
Probate duty	55		

ESTATE OF JOSEPH W. ROSSITER.

Commission	$ 30 55	Land payments	$ 611 10
Sundries	2 50		
Transmission	11 30		
Heir	66 68		
Taxes	24 85		
Commission	30 00		

ESTATE OF FRANK ROSSO.

Tombstone	$ 100 00	Ten shares, Durant Motors	$ 20 00
Commission	1 00		
Sundries	2 25		
Heirs	4,023 01		

ESTATE OF GEORGE H. RYMAN.

Commission	$ 1 18

ESTATE OF WILLIAM RUTT.

Funeral	$ 62 05	Sale of effects	$ 70 00
Commission	3 50	Cash	5 05
Hospital	4 80		
Postage	75		

ESTATE OF PERCY SCOTT.

Taxes	$ 82 56	Sale of land	$ 550 00
Legal	100 40		
Heir	150 75		
Affidavits and transmissions	7 80		
Sundries	2 75		
Guardian	27 50		
Commission	27 50		

ESTATE OF ELIS VAINO SANDSTEDT.

Commission	$ 57	Sale of effects	$ 2 45
Sundries	4 20	Wages	8 91
Shipping expenses	30		
Provincial Secretary	6 29		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Benjamin C. Shearing.			
Taxes	$ 73 55	J. C. Stewart	$ 36 77
Estate of Mrs. Mary Shoop.			
Commission	$ 21 20	Mortgage	$ 424 00
Sundries	75		
Heirs	2,000 00		
Taxes	17 51		
Estate of N. Reinikainen.			
Cartage	$ 50	Sale of effects	$ 7 50
		Cash	3 36
Estate of Baldwin Sigurdson.			
Personal effects	$ 50 00	Sale of effects	$ 303 47
Commission	70 41	Savings bank	943 25
Sundries	4 90	Cash	161 55
Legal	28 00		
Funeral	45 65		
Heirs	1,209 31		
Estate of David Silverman.			
Taxes	$ 135 07	Mortgage	$ 579 03
Legal	28 85	Rent	114 70
Commission	137 83	Sale of land	1,834 10
E. Morris	85 85		
Sundries	4 75		
Advertising	14 25		
Estate of Daniel Sirvaag (or Sarvaag).			
Commission	$ 55	Sale of effects	$ 11 00
Estate of Raphael Sevannier.			
Medical	$ 15 00	Bank	$ 762 28
Hospital	137 70		
Medical	100 00		
Legal	28 00		
Commission	38 11		
Sundries	2 95		
Probate duty	26 29		
Advertising	2 80		
Medical	150 00		
Estate of Bob Similjanich.			
Commission	$ 3 70	Wages	$ 74 09
Court fee	1 20		
Estate of Tom Sing.			
Funeral	$ 109 00	Bank	$1,104 46
Commission	64 72		
Advertising	2 80		
Estate of Bisham Singh.			
Taxes	$ 9 35		
Estate of Sher Singh.			
Commission	$ 5 00	Sale of horse	$ 20 00
Estate of Erin Skogerid.			
Funeral	$ 50 00	Cash and effects	$ 65 92
Commission	5 96	Bank	53 33
Postage	75		
Estate of Charles F. Skoglund.			
Loan and merchandise	$ 16 05		
Estate of Iver Smith.			
Certificate of title	$ 4 50	Cash and effects	$ 6 46
Commission	2 31	Sale of land	39 65
Sundries	75		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Steve Skoropata.			
Taxes	$ 16 20	Sale of land	$ 650 00
Commission, etc.	32 50		
Transmission fees	4 80		
Affidavits, etc.	4 70		
Commission	32 50		
Advertising	2 80		
Legal	25 00		
Postage	75		
Heirs	530 75		
Estate of Mrs. Anna Smith.			
Advertising	$ 4 40	Rent	$ 12 00
Estate of Emil Sorenson.			
Commission	$ 24 89	Cash and effects	$ 95 00
Affidavit, etc.	8 00	Funeral benefit	100 00
Postage	75	Bank	302 80
Funeral	150 50		
Hospital	188 00		
Probate duty	7 85		
Legal	12 00		
Estate of Mathilda Stevens.			
Grave	$ 30 50		
Heirs	359 38		
Postage	2 37		
Estate of Charles Steeves.			
Heir	$ 68 25		
Sundries	75		
Estate of Andrew Stillie.			
Loan	$ 27 00		
Funeral	125 00		
Tools	30 00		
Death certificates	75		
Heirs	110 65		
Estate of Jennie Stone.			
Medical and funeral	$ 300 00	Sale of land	$ 621 51
Sundries	4 45		
Commission	46 08		
Estate of Arthur Stokoe.			
Official Guardian	$ 2 00	Sale of effects	$ 2 00
Estate of Edward Smith.			
Funeral	$ 75 00	Bank	$ 107 48
Medical	15 00		
Hospital	9 00		
Sundries	3 11		
Commission	5 37		
Estate of Eli St. Jacques.			
Commission	$ 3 81	Funeral benefit	$ 76 19
Sundries	4 45		
Funeral	67 93		
Estate of William Sutherland.			
Commission	$ 130 69	Cash and effects	$ 44 00
Cartage	3 00	Wages	150 00
Funeral	176 00	Bank	416 69
Sundries	2 95	Funeral benefit	100 00
Probate duty	56 05	Rent	75 45
Legal	50 00	Sale of land	1,827 80
Medical	100 00		
Services	31 00		
Hospital	38 00		
Nursing	20 00		
Taxes	154 36		
Advertising	5 60		
Commission	32 50		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF ALECK SULZBACH.

Funeral	$ 318 00	Cash and effects	$ 17 36
Probate duty	7 70	Wages	2 49
Commission	62 81	Bank	1,236 30
Affidavits	9 50		
Postage	75		
Medical	125 00		
Hospital	47 20		
Legal	12 00		
Advertising	2 88		

ESTATE OF CHAS. FRANK SWARTZ.

Advertising	$ 2 40	Bank	$ 424 10
Legal	30 60		
Commission	21 15		
Sundries	2 50		
Probate duty	4 23		
Heirs	336 40		

ESTATE OF FRED LEVIN SWANSON.

Legal	$ 33 30
Funeral	165 00
Commission	167 32
Orders	2 00
Advertising	16 80
Probate duty	174 92
Succession duty	199 41
Income-tax	108 65
Postage	75
Heirs	2,629 76

ESTATE OF J. SWEENEY.

Cartage	$ 3 01	Bank deposit	$ 1 01
		Sale of effects	2 00

ESTATE OF S. TAKASAKI.

Sundry expenses	$ 4 45
Funeral	55 14

ESTATE OF EUGENE TANGUAY.

Commission	$ 27 11	Cash and effects	$ 45 85
Funeral	163 00	S. J. Simmons	522 54
Affidavit	5 00	Bank	334 46
Laundry	60		

ESTATE OF ANGELO TETI.

Water rates	$ 90 05	Rent	$1,261 95
Commission	178 20	Sale of land	2,075 64
Commission	100 00	Refund	46 66
Maintenance	700 00		
Taxes	1,088 19		
Repairs	176 57		
Postage	75		
Mortgage	559 30		
Filing fees	2 00		
Interest	60 00		
Repairs	34 00		
Legal	69 20		
Legal	55 25		
Valuating	5 00		

ESTATE OF HERBERT TENNANT.

Advertising	$ 128 80	Cash	$ 59 40
Advertising	2 80		
Legal	108 00		
Commission	2 97		
Postage	75		
Heir	537 75		

ESTATE OF ARCHIE THURLOW.

Commission	$ 2 72	Cash	$ 5 36
Freight and cartage	1 40	Sale of effects	9 00
Sundries	4 45	Bank	40 00
Christ Church, Alert Bay	27 47		
Coffin	18 32		

ESTATE OF ALEXANDER TOPPING.

Commission	$ 58

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of J. Trainor.			
Probate duty	$ 1 33	R. B. Ellis	$ 1 33
Estate of Joseph Turner.			
Commission	$ 3 16	Cash and effects	$ 63 22
St. Paul's Hospital	8 00	Sale of hull	20 00
Medical	20 00		
Advertising	2 64		
Legal	7 50		
Estate of Verner Tynelius.			
Commission	$ 11 37	Bank	$ 126 50
Sundry expenses	5 32		
Probate duty	11 30		
Heirs	194 70		
Cartage	5 00		
Estate of Joseph Turgeon.			
		Cash	$ 3 00
Estate of Unknown Man (Suicide).			
Commission	$ 26	Cash and effects	$ 5 16
Disposing of effects	2 00		
Estate of Unknown Man.			
Disposing of effects	$ 50	Effects	$ 50
Estate of Unknown.			
Disposing of effects	$ 75	Effects	$ 75
Estate of Oskar Usitalo.			
"Daily Province"	$ 2 75		
Heirs	109 08		
Estate of Janet Isabella Vickers.			
Probate duty	$ 3 01	Bank	$1,169 01
Medical	400 00		
Hospital	69 75		
Grave	60 50		
Nursing	5 00		
Medical	50 00		
Commission	58 35		
Affidavits	6 50		
Sundries	3 75		
Legal	45 00		
Advertising	4 40		
Funeral	311 50		
Estate of Arthur Vipond.			
Commission	$ 1 07	Cash and effects	$ 21 40
Effects and cartage	2 00		
Estate of Robert Waite.			
Legal	$ 16 00		
Commission	6 00		
Principal and interest	39 11		
Estate of Wm. Richard Waite.			
Mrs. Waite	$ 618 25	Land payments	$ 777 75
Advertising	2 40		
Estate of Sarah Waite.			
Water rates	$ 4 50	Sale of land	$1,350 40
Commission	88 75		
Heirs	1,589 65		
Postage	75		
Note	342 54		
Estate of James Waldie.			
Payments *re* D.L. 5246	$ 106 08	Sale of land	$ 154 40
Taxes	14 87	Postal note	73
Commission	7 76		
Postage	75		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of George Ware.			
Cartage and examination	$ 2 00	Sale of effects	$ 2 00
Estate of Mary Wellings.			
Legal	$ 35 35	Bank	$ 567 47
Medical	24 00		
Commission	28 37		
Sundry expenses	1 50		
Rent	100 00		
Hospital	15 50		
Funeral	141 50		
Medical	100 00		
Hospital	111 25		
Estate of Joshua West.			
Taxes	$ 137 15	Arthur West	$ 150 00
Commission	7 50		
Postage	75		
Estate of John Wickham.			
Legal	$ 203 69	Rent	$2,596 83
Commission	797 06	Sale of land	2,765 44
Heirs	22,100 00	Interest	21 25
Sundries	13 42	Bank	3,921 65
Taxes	501 48		
Repairs	224 95		
Sundries	4 25		
U.S. Federal estate-tax	46 81		
Estate of John Welsh.			
Commission	$ 1 00	Effects	$ 20 00
Postage	25		
Estate of Samuel Withycombe.			
Sundries	$ 75		
Heirs	724 37		
Estate of Daniel Whiteford.			
Commission	$ 339 65	Rents	$ 638 92
Sundries	4 20	Bank	596 35
Probate and succession duty	373 93	Land payments	5,558 00
Legal	104 00		
Taxes	1,094 05		
Taxes	3 30		
Advertising	8 40		
Valuating	5 00		
Interest	26 00		
Mortgage	1,362 33		
Postage	75		
Turner Meakin	18 75		
A. E. Austin & Co.	145 00		
Commission	110 00		
Water rates	4 80		
L.R.O. fees	26 45		
Funeral	440 00		
Adjustments	7 95		
Estate of Dan Williams.			
Funeral	$ 50 00	Cash and effects	$ 32 00
Loan	24 40	Bank	66 94
Petition and affidavits	5 95		
Commission	4 95		
Estate of James Windebank.			
Commission	$ 5 90	Sale of effects	$ 18 00
Postage	75	Sale of shack	100 00
Probate duty	1 18		
Estate of Fritz Wolki.			
Postage	$ 1 04		
Minor heirs	6,029 60		
Heir	4,522 20		
Estate of Wilfred Woods.			
Commission	$ 2 50	Cash and effects	$ 50 00
Postage	75		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF C. YAMAGAMI.

Commission	$ 8 75			
Sundry expenses	1 50			
Heir	158 34			

ESTATE OF MAY YOUNG.

Hodgson	$ 12 35	Rent	$ 300 00
Interest	62 30		
Commission	16 25		
Sundries	75		
Water rates	9 60		
Taxes	38 66		
Repairs	51 35		

ESTATE OF V. L. YOUNG.

Commission	$ 2 30	Cash	$ 46 20
Sundries	40		

W. H. MACINNES,
Official Administrator.

VICTORIA ELECTORAL DISTRICT.

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF MARGARET ALSTON.

Legal fees	$ 50 00	Estate of Sarah Bell	$ 465 00
Commission	23 25		
Probate duty	1 33		
Beneficiaries	514 65		

ESTATE OF HENRY BICKLE.

Commission	$ 38	Sale of watch	$ 7 65
Funeral	7 27		

ESTATE OF GEORGE BREDDY.

Legal fees	$ 39 78	Refund of succession duty	$ 30 22
Beneficiaries	875 28		

ESTATE OF LEAH LOUISA BIRCH.

Legal fees	$ 82 00
Beneficiaries	2,332 60

ESTATE OF MORRIS S. BROWN.

Legal fees	$ 157 40	Sale of bonds	$5,221 30
Commission	585 06		
Beneficiaries	6,018 54		

ESTATE OF ROBERT BATTENSBY.

Legal fees	$ 20 00
Merchandise	16 00
Beneficiaries	709 46

ESTATE OF CLAUDIA BEATE BLOOR.

Legal fees	$ 94 60	Bank	$ 292 29
Taxes	55 95	Sale of furniture	314 85
Commission	54 62	Rents	77 65
Probate duty	81		
Interest	60 00		
Merchandise	7 20		
Land Registry fees	7 75		

ESTATE OF BENJAMIN M. BRUBACHER.

Legal fees	$ 77 86	Sale of realty	$ 378 73
Commission	25 00		
Succession duty	38 53		
Merchandise	4 10		
Beneficiaries	233 24		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of William Bell.			
Legal fees	$ 85 50	Bank	$ 422 78
Commission	43 68	Cash	7 32
Probate duty	25 40	Sale of furniture and watch	394 90
Hospital	26 00		
Doctors	11 00		
Funeral	135 00		
Merchandise	85 80		
Beneficiaries	412 62		
Estate of Jessie Bennett.			
Legal fees	$ 170 00	Bank	$1,328 65
Commission	135 86	Sale of bonds	103 53
Funeral	329 75	Rents	51 30
Land Registry fee	7 25	Sale of house and contents	1,155 00
Merchandise	8 25		
Beneficiaries	1,987 37		
Estate of Emma Jane Blagburn.			
Legal fees	$ 57 00	Bank	$ 101 75
Commission	8 95	Cash	1 82
Probate and succession duty	35 48	Sale of furniture	71 80
Merchandise	10 86		
Estate of James Beaton.			
Legal fees	$ 61 00	Bank	$ 94 34
Commission	80 69	Cash	44 82
Hospital	20 00	Insurance	647 71
Doctors	112 00	Sale of furniture	46 15
Funeral	150 00	Sale of part of lot	688 40
Taxes	50 11	Payments on lot	64 74
Payment and interest	67 56		
Probate duty	3 56		
Merchandise	16 98		
F. H. Ball	213 55		
Estate of F. J. Colman.			
Taxes	$ 3 05		
Prov. Government, rental of Lease 791	2 65		
Estate of Choy Young.			
Legal fees	$ 70 00		
Beneficiaries	1,887 45		
Estate of Chow Gar Yat.			
Legal fees	$ 28 50		
Beneficiaries	100 50		
Estate of George Myles Callicutt.			
Commission	$ 70	Sale of lots	$ 14 03
Beneficiaries	35 48		
Estate of Robert Clark.			
Commission	$ 54 59	Sale of bonds	$1,091 82
Taxes	112 04		
Merchandise	2 50		
Estate of Andrew Cox.			
Legal fees	$ 55 00	Payments on lots	$2,299 20
Commission	115 00		
Taxes	395 77		
Doctors	25 00		
Children's board	525 65		
Merchandise	1 00		
Estate of Alexander McBride Crawford.			
Commission	$ 10 18	Sale of part of lot	$ 13 62
Merchandise	6 20	Payment on lot	38 50
Estate of Felix Donolf.			
Legal fees	$ 10 00	Cash	$ 46 00
Commission	3 01	Wages	14 25

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	

ESTATE OF STANLEY HORTON DE CARTERET.

Commission	$ 12 68	Sale of bonds	$ 53 50
Beneficiaries	138 80		

ESTATE OF MIKE DECHOUK.

Taxes	$ 19 35

ESTATE OF JOHN POW DONALDSON.

Legal fees	$ 632 85	Insurance	$1,215 64
Commission	125 66	Sale of lots	489 88
Funeral	137 75		
Doctors	61 00		
Merchandise	65 52		
Beneficiaries	748 06		

ESTATE OF JOSEPH GILBERT DODD.

Commission	$ 66	Sale of personal effects	$ 74 00
Funeral	155 75		
Hospital	37 50		
Doctors	40 00		
Merchandise	32 00		

ESTATE OF GEORGE RICHARD DAY.

Legal fees	$ 51 65	Bank	$1,944 15
Commission	134 14	Sale of lots	738 55
Taxes	76 46		
Merchandise	1 78		
Beneficiaries	2,700 00		
Land Registry fee	11 50		

ESTATE OF DER DONG.

Commission	$ 28 68	Bank	$ 573 69
Funeral	42 00		
Merchandise	107 15		

ESTATE OF GEORGE ELBY.

Commission	$ 10 27	Pension	$ 205 49

ESTATE OF WILLIAM CHARLES ELLIOTT.

Legal fees	$ 101 32
Taxes	22 00

ESTATE OF MORRIS FALLON.

Commission	$ 16	Cash	$ 96
Funeral	3 05	Sale of watch	2 25

ESTATE OF OCTAVIUS FIELD.

Legal fees	$ 109 91
Beneficiaries	1,907 00
Merchandise	1 00

ESTATE OF EDWARD FISHER.

Taxes	$ 3 12

ESTATE OF HARRISON GARSIDE.

Commission	$ 62 25	Sale of realty	$1,245 00
Merchandise	1 00		

ESTATE OF SARAH JANE GREEN.

Hospital	$ 609 68
Doctors	277 85
Nurses	13 48

ESTATE OF ERNEST CHARLES HODGE.

Commission	$ 1 65	Cash	$ 28 50
		Sale of watch	4 50

ESTATE OF JAMES HARTLEY.

Commission	$ 3 57	Dividends	$ 71 41

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	

ESTATE OF THOMAS SHERMAN HOWE.

Legal fees	$ 41 10	Bank	$ 82 18
Commission	6 01	Cash	28 00
Funeral	23 29	Sale of house-boat	10 00
Hospital	46 58		
Merchandise	3 20		

ESTATE OF SARAH HOLMES.

Commission	$ 75	Sale of realty	$ 15 00
Beneficiaries	14 25		

ESTATE OF WESTON W. HIGMAN.

Commission	$ 1 00	Bank	$ 20 00
Funeral	19 00		

ESTATE OF JOHN HANLEY.

Commission	$ 1 17	Sale of stove and bed	$ 5 00
		Wages	41

ESTATE OF TAM KIT HING.

Legal fees	$ 63 80
Merchandise	10 00
Beneficiaries	1,003 26

ESTATE OF ANDREW JENSEN.

Commission	$ 50	Sale of effects	$ 10 00
Funeral	9 50		

ESTATE OF DAVID JONES.

Legal fees	$ 76 00	Sale of effects	$ 1 25
Commission	10 35	Interest on mortgage	205 70
Beneficiaries	210 00		

ESTATE OF JOSEPH L. JENKS.

Legal fees	$ 226 95	Sale of trunk	$ 16 60
Commission	88 98	California estate	1,763 15
Merchandise	1 00		
Beneficiaries	1,800 00		

ESTATE OF WILLIAM JOHNS.

Legal fees	$ 66 70	Rents	$ 257 57
Commission	87 92	Sale of equity	149 34

ESTATE OF SING JUM.

Commission	$ 21 49	Bank	$ 429 70
Merchandise	3 30		

ESTATE OF ALFRED DONALD KIDMAN.

Commission	$ 7 18	Bank	$ 61 87
Merchandise	1 00	Cash	49 95
		Sale of effects	31 80

ESTATE OF MARK THOMAS KING.

Commission	$ 5 11

ESTATE OF LOUIS LANOIT.

Legal fees	$ 94 20
Probate duty	165 94
Beneficiaries	2,201 32

ESTATE OF LABOO.

Legal fees	$ 112 45
Beneficiaries	442 43

ESTATE OF ELIZABETH LAWSON.

Legal fees	$ 18 45
Hospital	60 00
Funeral	20 00
Board	13 27

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of Thomas Whelen Lindsay.			
Legal fees	$ 40 00	Bank	$ 434 64
Commission	21 73		
Funeral	16 50		
Probate duty	3 92		
Doctors	21 00		
Merchandise	1 20		
Estate of Annie Leicester.			
Legal fees	$ 77 00	Sale of bonds	$ 538 88
Commission	41 17	Payments on land	284 64
Probate duty	4 48		
Land Registry	11 00		
Funeral, doctors, and nurses	583 09		
Merchandise	4 20		
Estate of George Lang.			
Commission	$ 32 32	Bank	$ 470 83
Funeral	105 00	Cash	70 54
Hospital	6 00	Sale of effects	11 90
Doctors	52 50	Note	90 00
Merchandise	3 20		
Estate of William Henry Marshall.			
Merchandise	$ 1 00		
Estate of Eliza Marshall.			
Commission	$ 73	Bank	$ 14 70
Estate of George Albert Morphy.			
Commission	$ 31 25	Insurance	$ 617 70
Estate of William Moyle.			
Legal fees	$ 9 25	Sale of bonds	$1,019 87
Commission	51 25	Sale of watch and chain	5 15
Beneficiaries	3,069 17		
Estate of Elsie Lydia Heath Milbourne.			
Legal fees	$ 65 00	Bank	$ 440 45
Commission	26 46	Cash	49 06
Probate duty	3 14	Sale of effects	8 85
Funeral	125 00		
Hospital	66 00		
Merchandise	9 40		
Doctors	15 00		
Beneficiaries	188 36		
Estate of Henry Martyn.			
Legal fees	$ 133 00	Bank	$ 370 71
Commission	180 61	Sale of bonds	540 25
Funeral	185 75		
Land Registry	33 30		
Merchandise	5 40		
Expenses on realty and bonds	23 50		
Beneficiaries	349 40		
Estate of Bridget Murray.			
Commission	$ 5 88	Bank	$ 117 65
Land Registry fee	6 50		
Advertising	5 80		
Estate of Thomas McCormick.			
Taxes	$ 3 12		
Estate of Ewen Ronald McPhee.			
Commission	$ 38 60	Sale of realty	$ 73 94
Funeral	144 84	Sale of watch	12 00
Merchandise	35 86		
Hospital and doctors	16 61		
Estate of Robert James McCoubrey.			
Legal fees	$ 608 69		
Beneficiaries	8,240 99		
Note	3,000 00		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF ANNIE McKENZIE.

Legal fees	$ 35 00	Rents	$ 367 85
Commission	18 33		
Taxes	352 86		
Repairs	243 70		
Insurance	34 25		

ESTATE OF ALEXANDER DAVID McLACHLAN.

Legal fees	$ 120 00	Sale of effects	$ 31 50
Commission	5 32	Rents	7 00
Hospital	21 53	Quit-claim	53 00
Funeral	112 08		
Doctors	34 73		

ESTATE OF JAMES McMILLAN.

Legal fees	$ 65 00	Bank	$ 140 11
Commission	92 12	Cash	16 65
Funeral	252 00	Sale of stock	1,540 00
Probate and succession duty	81 31	Accounts	145 58
Personal-property tax	41 30		
Hospital and doctor	38 00		
Rents	150 00		
Merchandise	613 33		

ESTATE OF ELIZABETH HARBERTON McKAY.

Commission	$ 3 40	Bank	$ 39 58
Advertising	3 10	Rent	8 50

ESTATE OF THOMAS NUNN.

Commission	$ 83	Bank	$ 16 60

ESTATE OF FREDERICK NOEL.

Legal fees	$ 20 00

ESTATE OF PEDER ANTON NELSEN.

Legal fees	$ 350 00
Commission	632 08
Funeral	261 52
Doctors	155 00
Merchandise	48 00
Beneficiaries	2,000 00

ESTATE OF JOHN NEWTON.

Legal fees	$ 37 80	Bank	$ 202 79
Commission	16 65	Insurance	130 25
Funeral	158 00		
Doctors	5 00		
Merchandise	3 20		

ESTATE OF ERNEST JOHN NAYLOR.

Commission	$ 75 90	Accounts	$ 440 50
Merchandise	50	Bank	1,068 48
		Hawick Hosiery Co.	9 12

ESTATE OF EDWARD ALEXIUS O'BERG.

Legal fees	$ 20 35	Bank	$ 165 37
Commission	11 20	Wages	52 98
Funeral	25 00	Sale of effects	5 60
Merchandise	1 00		

ESTATE OF MATTHEW O'BRIEN.

Beneficiaries	$3,009 26

ESTATE OF GRACE M. M. PARSHALLE.

Legal fees	$ 6,718 90	Rents	$ 6,794 03
Commission	2,773 09	Mortgages	25,175 00
Insurance	692 09	Interest	175 00
Taxes	13,402 65		
Interest on mortgage	713 60		
Repairs and postage	3 70		

DR.—*January 1st to December 31st, 1926.* CR.—*January 1st to December 31st, 1926.*

ESTATE OF JOANNA PETTINGALL.

Legal fees	$ 90 00	Rents	$ 202 87
Commission	16 15		
Land Registry	21 25		
Fire insurance	16 50		
Merchandise	4 10		

ESTATE OF SIDNEY GORDON RUSSELL.

Legal fees	$ 591 23
Beneficiaries	1,089 75

ESTATE OF JOHN BENJAMIN HAMILTON RICKABY.

Legal fees	$ 20 00	Rents	$ 33 25
Commission	176 26	Sale of realty	2,368 10
Interest on mortgage	15 00		
Beneficiaries	2,375 38		

ESTATE OF MICHAEL SLETTEBO.

Legal fees	$ 73 33	Sale of realty	$ 368 90
Commission	18 75		
Beneficiaries	273 42		
Merchandise	3 40		

ESTATE OF REGINALD STRAINGEWAY.

Commission	$ 29	Sale of watch	$ 5 85

ESTATE OF ROSALIE ST. LOUIS.

Commission	$ 5 00	Estate of E. J. Bitancourt	$ 100 00

ESTATE OF HENRY LEMUEL SMITH.

Legal fees	$ 62 50
Beneficiaries	580 84

ESTATE OF JAMES HENRY SUTTON.

Beneficiaries	$ 206 91

ESTATE OF MARY SMITH.

Commission	$ 9 22	Bank	$ 112 49
Funeral	75 00	Sale of effects	17 35
Probate duty	19 61	Cash	54 67
Merchandise	3 50		

ESTATE OF ISAK OSKAR SUNDQUIST.

Legal fees	$ 23 85	Bank	$ 108 63
Commission	10 45	Cash	93 20
Probate duty	1 05	Sale of effects	7 20
Funeral	110 00		
Income-tax	2 80		
Merchandise	1 00		

ESTATE OF WILLIAM J. VENNER.

Legal fees	$ 119 70	Bank	$ 360 37
Commission	25 57	Sale of bonds	117 13
Hospital	28 75	Dividends	6 20
Doctors and nurses	245 00		
Merchandise	1 50		
Beneficiaries	95 04		

ESTATE OF GEORGE LLEWELLYN WOOD.

Beneficiaries	$ 435 36

ESTATE OF RONALD CAMERON WATSON.

Legal fees	$ 25 00
Beneficiaries	5,824 05

ESTATE OF NELLIE WAYMAN.

Legal fees	$ 103 28	Payments on realty	$ 70 95
Commission	29 40	Payments on realty	451 25
Funeral	105 00		
Merchandise	3 50		

Dr.—*January 1st to December 31st, 1926.* Cr.—*January 1st to December 31st, 1926.*

ESTATE OF JOE GEE WING.

Legal fees	$ 53 10	Bank	$1,450 29
Commission	72 51		
Funeral	315 00		
Merchandise	4 36		
Doctors	6 00		
Beneficiaries	760 00		

ESTATE OF DON WAH.

Legal fees	$ 192 10	Bank	$2,178 34
Commission	108 92		
Funeral	197 00		
Merchandise	7 40		

R. L. COX,
Official Administrator.

YALE AND SIMILKAMEEN DISTRICTS (PART).

RETURN OF MONEYS received and paid on account of Intestate Estates for the Year ended December 31st, 1926, as required by Section 53 of the "Administration Act," "Revised Statutes of British Columbia, 1924."

Dr.—*January 1st to December 31st, 1926.* Cr.—*January 1st to December 31st, 1926.*

ESTATE OF AH LEE.

Commission	$ 7 28	Wages	$ 145 70
Funeral	100 00		
Legal expense	32 90		
Probate duty	2 30		

ESTATE OF JOHN E. ANDERSON.

Taxes	$ 2 72	Land-sale	$ 125 00
Commission	6 25		

ESTATE OF ALEC CURRIE.

Funeral	$ 129 06	Bank	$ 206 15
Hospital	12 50	Wages	34 36
Doctor	40 00		
Legal	28 20		
Commission	12 00		

ESTATE OF JAMES CAMPBELL.

Commission	$ 50 50	Option fee	$ 10 00
Legal expense	81 22	Land-sale	1,010 00

ESTATE OF ARCHELE CHARTRAND.

Commission	$ 22 73	Interest	$ 455 00
Next of kin	390 00	Principal	200 00
Education of children	108 00		

ESTATE OF JOHN EDWARDS.

Commission	$ 11 33	Cash	$ 7 15
Travelling expenses	10 00	Sale of shack	34 00
Grocery account	3 50	Wages	53 09
Funeral	35 00	Bank	132 41

ESTATE OF VALENTIN FLUTSCH.

Commission	$ 3 68	Cash	$ 16 48
Legal expense	18 70	Wages	57 15
Funeral	20 00		

ESTATE OF JEREMIAH P. FRAME.

Commission	$ 15 65	Cash	$ 313 00

ESTATE OF TIMOTHY J. GRIFFIN.

Commission	$ 21 37	Personal effects	$ 126 00
Legal	100 00	Bank	2 16
Succession duty	5 50	Land-sales	299 25
Taxes	5 75		
Funeral	28 70		

Dr.—*January 1st to December 31st, 1926.*		Cr.—*January 1st to December 31st, 1926.*	
Estate of John Hickey.			
Commission	$ 3 18	Cash	$ 13 55
		Sale of horse	50 00
Estate of Wilbur Eugene Johnson.			
Commission	$ 5 08	Rentals	$ 101 70
Legal expense	50 00		
Estate of Long Jim.			
Commission	$ 52 42	Cash	$ 33 85
Funeral	100 00	Bank	1,014 46
Legal expense	64 00		
Advertising	10 00		
Probate duty	47 41		
Estate of Elmore McAvoy.			
Commission	$ 45 16	Cash	$ 41 42
Probate duty	9 60	Bank	861 94
Funeral	217 50		
Legal expense	60 00		
Groceries	19 40		
Advertising	7 50		
Estate of Hugh A. MacKenzie.			
Telegram, storage, etc.	$ 17 70	Cash	$ 41 05
Probate duty	1,070 77	Wages	117 23
Succession duty	1,221 12	Bank	1,457 41
Succession duty to Province of Quebec	518 95	Victory bonds	819 92
Funeral	593 04	Stock-sales	17,764 63
Legal expense	35 00	Dividends	515 50
Succession duty to Province of Ontario	214 37	Interest	41 25
Commission	1,035 10		
Estate of R. M. McPherson.			
Commission	$ 1 15	Wages	$ 22 91
Hospital	3 75		
Legal expense	16 00		
Estate of William McLeod.			
Commission	$ 4 99	Sick Fund	$ 99 75
Express, etc.	2 39		
Advertising	6 75		
Estate of L. Nelepowitz.			
Commission	$ 53 91	Bank	$1,078 28
Probate duty	26 05		
Constable's expenses	5 72		
Funeral	100 00		
Groceries	15 00		
Legal	60 00		
Advertising	6 50		
Estate of A. Oettli.			
		Sale of effects	$ 15 30
Estate of Frank Troyanek.			
Commission	$ 5 87	Bank	$ 117 47
Legal expense	52 80		
Estate of George Wellington Walker.			
Next of kin	$ 487 23		

M. L. GRIMMETT,
Official Administrator.

VICTORIA, B.C.:
Printed by Charles F. Banfield, Printer to the King's Most Excellent Majesty.
1927.

PROVINCE OF BRITISH COLUMBIA

REPORT

OF THE

PROVINCIAL MUSEUM

OF

NATURAL HISTORY

FOR THE YEAR 1926

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

To His Honour ROBERT RANDOLPH BRUCE,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned respectfully submits herewith the Annual Report of the Provincial Museum of Natural History for the year 1926.

WILLIAM SLOAN,

Provincial Secretary.

Provincial Secretary's Office,

Victoria, B.C., March, 1927.

PROVINCIAL MUSEUM OF NATURAL HISTORY,

VICTORIA, B.C., March 1st, 1927.

The Honourable William Sloan,

Provincial Secretary, Victoria, B.C.

SIR,—I have the honour, as Director of the Provincial Museum of Natural History, to lay before you the Report for the year ended December 31st, 1926, covering the activities of the Museum.

I have the honour to be,

Sir,

Your obedient servant,

FRANCIS KERMODE,

Director.

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DEPARTMENT *of the* PROVINCIAL SECRETARY.

The Honourable William Sloan, *Minister.*

J. L. White, *Deputy Minister.*

PROVINCIAL MUSEUM OF NATURAL HISTORY.

Staff:

Francis Kermode, *Director.*

George A. Hardy, *Assistant Biologist.* Winifred V. Redfern, *Recorder.*

Nellie P. Bittancourt, *Stenographer.* Edward A. Cooke, *Attendant.*

Wilfred H. Gibson, *Apprentice.*

REPORT *of the*
PROVINCIAL MUSEUM OF NATURAL HISTORY

FOR THE YEAR 1926.

By Francis Kermode, *Director*.

OBJECTS.

(*a.*) To secure and preserve specimens illustrating the natural history of the Province.

(*b.*) To collect anthropological material relating to the aboriginal races of the Province.

(*c.*) To obtain information respecting the natural sciences, relating particularly to the natural history of the Province, and diffuse knowledge regarding the same.

ADMISSION.

The Provincial Museum is open, free, to the public daily throughout the year from 9 a.m. to 5 p.m. (except New Year's Day, Good Friday, and Christmas Day); it is also open on Sunday afternoons from 1 p.m. to 5 p.m. from May 1st until the end of October.

VISITORS.

The following figures show the difference between those who registered their names in the book and those who were checked by the attendants. While only 29,623 people registered, the total of the check was 45,648.

	Register.	Check.
January	1,445	2,016
February	1,307	1,774
March	1,131	1,733
April	1,178	1,927
May	1,700	2,773
June	2,753	4,477
July	7,412	10,899
August	6,689	10,012
September	2,982	4,563
October	1,397	2,183
November	757	1,324
December	872	1,967
Totals	29,623	45,648

The Museum was honoured on November 29th by a visit from the third son of His Majesty King George V., Prince George, who was returning home to London, England, from China.

Several times during the year His Honour Lieutenant-Governor Bruce, who is greatly interested in natural history, brought distinguished visitors from Government House to visit the collections.

ACTIVITIES.

A reorganization of the staff was put into effect during the early part of the year 1926, in order that the office-work, which has been steadily increasing from year to year, could be handled to better advantage. One attendant was transferred to another department and a stenographer appointed, also an assistant to be trained in various branches of science.

The students in our schools and colleges are constantly bringing in specimens for identification, while private collectors continue to send in material, particularly in the botanical and entomological branches of science.

Mr. W. B. Anderson, Dominion Inspector of Indian Orchards; Mr. G. V. Copley, of the Grazing Commission; and Mrs. J. P. MacFadden, of New Denver, B.C., have donated a large amount of botanical specimens; while the Alice Siding School, under the direction of Mr. Charles Lallemand; Mr. W. H. A. Preece, of Sidney, V.I.; and Mr. G. Stace Smith, of Creston, B.C.,

have aided materially in increasing the entomological collection. Specimens amounting to approximately 900, principally Coleoptera, were purchased from Mr. J. W. Cockle, of Kaslo, B.C.

One short field-trip of about three weeks' duration was made by the Assistant Biologist, Mr. G. A. Hardy, to Mount Garibaldi, where he was associated with the camp established by Mr. Bell-Irving, of Vancouver, and the B.C. Mountaineering Club. The Museum has not been in a position for some little time, on account of finances, to carry out any extensive field-work, but, as the opportunity arose, it was thought desirous that one of the staff should undertake a trip in the Mount Garibaldi Park, to work up the flora and fauna of that region. It is gratifying to note that Mr. Hardy's work in that locality during the three weeks' trip was of great value to the Museum, and several new species in botany and entomology were recorded for British Columbia. It is to be hoped that from time to time the finances of the Museum will permit further expeditions into some of these isolated localities where little collecting-work has been done.

In the conchological section the Univalves have received attention, and Mr. W. A. Newcombe has again kindly donated some specimens from the collection made by his father, the late Dr. C. F. Newcombe. The Museum Univalves, together with some from the Newcombe collection, were sent to Dr. Bartsch for identification, and will be arranged according to the latest changes in names and nomenclature. A detailed account of these will be found on page 28.

A number of new cases have been installed on the upper floor, including five wall-cases. In two of these the Reptilia and Amphibia are now displayed; the remainder are intended to be used for specimens of marine animals. Three dozen double-sided storage-boxes for insects were made for the accommodation of the fast-growing collection. Here, named material is being stored until such time as proper cabinet display may be provided.

Numerous requests are received from time to time for the loan of specimens for educational purposes, particularly in ornithology. These requests are complied with whenever possible, and it is gratifying to note that many of the older pupils of the city and rural schools are taking a much greater interest of late in natural history.

A perusal of the various sections of the report will indicate that much useful and valuable work has been done regarding the natural history of this Province. Special thanks are due to specialists in the various branches of science for the invaluable help, and due acknowledgments are made in the body of the report.

ANTHROPOLOGY.

The Museum has been offered the opportunity, through the offices of Mr. W. A. Newcombe, to purchase a large number of anthropological specimens collected by the late Dr. W. F. Tolmie and his son, John Tolmie, one of the earliest pioneers in the services of the Hudson's Bay Company in this Province. The collection contains a great many designs in large basketry-work, which cannot be obtained from the Indians of to-day as the art is fast disappearing. There are also many implements made of stone that were found on the old Cloverdale Farm in the early days of the Hudson's Bay Company, and it is hoped that in the next annual report we will be able to give an itemized list and description of these most desirable specimens.

PALÆONTOLOGY.

Reference was made on page 10, Mus. Rep., 1925, to a fine collecion of fossils presented by Mr. S. C. Burton, of Kamloops, B.C. These had been found in the fossiliferous sandstone of the Tranquille geological formations at the west end of Kamloops Lake. They were sent to the Smithsonian Institution for examination and have been returned with the following determinations by Dr. Bassler:—

Taxodium dubium Heer.
Populus obtrita Dawson.
Jugland sp.
Alnus carpinoides Lesquerowe.
Alnites curta Dawson.
Myrica sp.

Leg-bone of mammoth, taken in the Yukon, 1900. W. A. Newcombe.

BOTANY.

By G. A. Hardy.

The past season has resulted in the acquisition of many interesting records and specimens, thus steadily adding to our knowledge of the flora of this Province.

The number of additions to the collection total some 664 specimens, being an increase of nearly twice that of the previous year. Of these, eight are new to the Province and thirty-one to the Herbarium.

The collection of Mosses and Linchens has been further enriched by the enthusiasm and generosity of Mrs. J. P. MacFadden, of New Denver, B.C.; these are supplementary to a previous donation of Hepatics last year, and are as authoritatively named and are scientifically mounted, forming a model as to how such specimens should be treated. The Mosses are listed separately elsewhere in the report, on page 11.

We have much pleasure in acknowledging our indebtedness to those who have continued to benefit the Herbarium by their sustained zeal and consistency, Mr. W. B. Anderson, Inspector of Indian Orchards, and Mr. G. V. Copley, of the Grazing Commission. These two gentlemen have constantly, throughout a number of years, added much invaluable material, not otherwise acquired, and have made the most of their opportunities in connection with professional duties. The Rev. R. Connell, who has discovered several new and rare plants on Vancouver Island which he has generously presented to the Museum, deserves special recognition. To these and other contributors whose donations are of no less value, we heartily record our thanks and appreciation in thus helping to build up a public reference collection of plants of British Columbia that will be second to none, an end obtainable only by a wide and enthusiastic co-operation of all concerned.

An opportunity was afforded to make a short visit to Garibaldi Park in the interests of the Museum. A number of very acceptable additions were thus secured. As these are from a locality not previously represented in the Museum, they are listed under the Report for Garibaldi Park on page 15.

The following is a list of contributors, the number in brackets referring to the specimens donated: Miss Allen (27), J. R. Anderson (3), W. B. Anderson (32), W. B. Anderson and G. V. Copley (27), Miss N. P. Bittancourt (1), Rev. R. Connell (14), Miss E. Copley (2), G. V. Copley (102), H. R. Eldridge (1), Mrs. M. Hankin (1), G. A. Hardy (187), N. Harper (1), D. Munday (1), Mrs. J. P. MacFadden (251), T. P. McKenzie (1), W. A. Newcombe (4), F. Perry (1), W. H. A. Preece (1), Miss W. V. Redfern (1), N. Sanson (1), W. Shephard (1), A. Sherwood (2), Mrs. Thacker (1), and P. deNoe Walker (1).

To the following specialists we gratefully proffer our thanks for the invaluable assistance they have rendered in the naming and verification of a large number of species: Professor C. R. Ball (Salix) and A. S. Hitchcock (Graminæ) of the U.S. Nat. Mus., Washington, D.C.; Professor H. St. John (General), of Pullman, Wash.; Professor Piper Smith (Lupines), San Jose, Calif.; Mrs. R. Erlanson (Rosaceæ), Ann Arbor, Mich.; K. K. Mackenzie (Sedges), New York City; and Dr. J. W. Bailey (Mosses), Seattle, Wash.

Mr. W. A. Newcombe has always allowed access to his extensive herbarium and library, a privilege greatly appreciated.

Messrs. W. B. Anderson and G. V. Copley have taken a number of plants (48) on the Washington side of the boundary which may occur in British Columbia and therefore are welcome additions for purposes of comparison.

The living wild-flower display, exhibiting the local seasonal plants, has been maintained as usual throughout the season. It has a special appeal to visitors from other districts, as it shows at a glance the predominating species in the vicinity of Victoria in flower at the time.

Advantage is continued to be taken of the exhibit and Herbarium by students and others interested in the native flora, and fully justifies the time and effort expended in that direction.

A departure from the usual method of recording is made in this issue. In the following list only records of special interest are noted. Names of collectors are placed in brackets. Localities not followed by V.I. (Vancouver Island) are from the Mainland of British Columbia.

The following plants are new to British Columbia:—

Leguminosæ (Pea Family).

Lupinus formosus Greene var. *bridgesi* (Wats.) Greene. Victoria, V.I. (G. A. Hardy).
Oxytropis luteolus (Greene) Piper. Trial Island, off east coast of V.I. (Rev. R. Connell).

Campanulaceæ (Bluebell Family).

Githopsis specularioides Nutt. var. *glabrata* Jepson. Sooke, V.I. (Rev. R. Connell).
Specularia speculum DC. Shawnigan Lake, V.I. (W. Shephard). Introduced.

COMPOSITÆ (COMPOSITE FAMILY).

Arnica cascadensis St. John nov. sp. (Anderson's Arnica), Mount McLean (W. B. Anderson).
Aster angustus (Lindl.) T. & G. Windermere (W. B. Anderson).
Grindelia integrrima Rydb. Windermere (W. B. Anderson).

Plants which are supplementary additions to the Provincial Museum Preliminary Check-list, "The Flora of Vancouver and Queen Charlotte Islands," 1921 (introduced plants being printed in italics in conformity with the printing of the Check-list) :—

LEGUMINOSÆ (PEA FAMILY).

Lupinus rivularis Dougl. Sooke, V.I. (Rev. R. Connell).
Lupinus formosus Greene var. bridgesi (Wats.) Greene. Victoria, V.I. (G. A. Hardy).
Oxytropis luteolus (Greene) Piper. Trial Island, off east coast of V.I. (Rev. R. Connell).

CAMPANULACEÆ (BLUEBELL FAMILY).

Githopsis specularioides Nutt. var. glabrata Jepson. Sooke, V.I. (Rev. R. Connell).
Specularia speculum DC. Shawnigan Lake, V.I. (W. Shephard).

COMPOSITÆ (COMPOSITE FAMILY).

Hemizonella minima Gray. (*Durandii* Gray). Sooke, V.I. (Rev. R. Connell).

We are indebted to Professor H. St. John, of Pullman, Wash., for the honour of kindly allowing us to publish the following description of his species new to science, collected by Mr. W. B. Anderson from Mount McLean, B.C. It is as follows:—

ARNICA CASCADENSIS ST. JOHN NOV. SP.

(By Harold St. John.)

Perennial, with an horizontal woody root-stock; stem slender, erect, simple, about 1 dm. high, clothed at the base with the shrivelled remnants of several pairs of leaves, their axils showing a tuft of white pilose hairs, bearing 3 or 4 pairs of leaves, which are gradually reduced upwards; basal leaves coriaceous oblanceolate, 5-nerved, glabrous on both sides, pilose-ciliate, especially towards the short petiolar base, more or less denticulate towards the tip, 2.5-4 cm. long, 5-9 mm. broad; cauline leaves similar but broader and shorter, the median pair lanceolate and about 2.5 cm. long, the upper pair ovate-lanceolate acuminate and about 1.5 cm. long; inflorescence of 1 terminal flower or commonly a 3-flowered cyme; peduncles slender, elongate, becoming densely pilose towards the tip, 2-7 cm. long, often as long as the true stem of the plant; heads turbinate, the disc about 1 cm. high; bracts equal, about 12 in number, oblong-elliptic, densely white-pilose at base above glabrate on the back, white hirsute-ciliate, not at all glandular; rays about 10, deep orange-yellow, the blades broadly elliptic, 12 mm. long, prominently veined; disc-flowers numerous, deep yellow; achenes linear, black, 5 mm. long, densely incanous; pappus white barbellate, slightly exceeding the achenes.

Perennis, foliis 3-4-jugis lanceolatis, floribus cymosis aurantiaciflavosis, achæneis incanis.

British Columbia: Mount McLean, July 11th, 1926, *W. B. Anderson* 8003 (type in Herb. State College of Washington), and a duplicate in the Provincial Museum of Natural History.

This extremely attractive little *Arnica* belongs in the section Alpinæ. Its closest relative is *A. aurantiaca* Greene, which was first described from the Wallowa Mountains of Eastern Oregon. It is now known to range from British Columbia to Oregon. Coulter & Nelson and Rydberg all refer this species to *A. Rydbergii* Greene. Judging by the original description, the writer is not satisfied that this is the proper disposition of these species. *A. aurantiaca* seems to be a good and distinct entity. It has glandular leaves, the peduncle glandular as well as hairy, is monocephalous or with weak and later axillary heads, the bracts narrowly lanceolate, very short ciliate towards the tip and glandular on the back. The new *A. cascadensis* has eglandular leaves, is usually crowned with a 3-headed cyme, has the bracts eglandular oblong-elliptic and long white hirsute-ciliate.

Hepatics.

The following Hepatics are additions to the list published in the Report for 1925, page 16, and were collected and kindly presented to the Museum by Mrs. J. P. MacFadden, of New Denver. They were determined by Dr. Geo. H. Conklin, of Superior, Wis.

Cephalozia bicuspidata (L.) Dumort.
Cephalozia Lammersiana (Huben.) Spruce.
Cephaloziella Hampeana (Nees.) Schiffn.
Cephaloziella byssacea (Roth.) Warnst.
Chiloscyphus polyanthos (L.) Corda.
Chiloscyphus rivularis (Schrad.) Loeske.
Harpanthus Flotowianus Nees.
Lophozia alpestris var. *gelida* (Tayl.) McVic.
Lophozia inflata (Huds.) M. A. Howe.
Pellia Fabroniana Raddi.
Pellia Neesiana (Gottsche.) Limpr.
Radula complanata (L.) Dumort.
Scapania undulata (L.) Dumort.
Scapania dentata var. *ambigua.*
Scapania dentata Dumort.
Scapania Bolanderi Aust.

Musci (Mosses).

(Presented by Mrs. J. P. MacFadden.)

We are much indebted to Mrs. J. P. MacFadden, of New Denver, for the Mosses listed below, collected in the south-eastern section of the Province. For the arrangement followed, and for the interest he has shown in this connection, our best thanks are due to Dr. John W. Bailey, of Seattle, Wash. The chief work used is Dixon & Jameson's "British Mosses," with Dr. Grout's modification in some cases.

CLASS MUSCI.

Subclass I. Sphagnales.

Order I. Sphagnaceæ.

Sphagnum acutifolium Ehrh.

Subclass II. Andreæales.

Order II. Andreæaceæ.

Andreæa obovata Thed.

Subclass III. Bryales.

Group A. *Nematodonteæ.*

Order III. Tetraphidaceæ.

Tetraphis pellucida Hedw.

Order IV. Polytrichaceæ.

Catharinea undulata (L.) W. & M.
Oligotrichum aligerum Mitt.
Oligotrichum parallelum (Mitt) Kindb.
Pogonatum alpinum (L.) Roehl.
Pogonatum urnigerum (L.) Beauv.
Polytrichium juniperinum Willd.
Polytrichium piliferum Screb.
Polytrichium strictum Banks.
Polytrichium sexangulare Floerk.

Order V. Buxbaumiaceæ.

Buxbaumia aphylla L.
Buxbaumia Piperi Best.

Group B. *Arthrodonteæ.*

Subgroup I. Aplolepideæ.

Order VI. Dicranaceæ.

Ditrichum flexicaule Hampe.
Ditrichum pallidum (Schreb.) Hampe.
Ditrichum tenuifolium (Schp.) Lindb.
Swartzia inclinata Hedw.
Swartzia montana (Lam.) Lindb.
Seligeria calcarea (Dicks) B. & S.
Seligeria recurvata (Dicks) B. & S.
Ceratodon purpureus (L.) Brid
Cynodontium polycarpum (Ehrh.) Schp.
Oncophorus virens (Sw.) Brid.
Oncophorus strumiferum (Ehrh.) DeNot.
Dichodontium flavescens (Dicks) Lindb.
Dichodontium pellucidum (L.) Schimp.
Dicranella crispa (Ehrh.) Schp.
Dicranella Grevilleana (Brid.) Schp.
Dicranella heteromalla (L.) Schp.
Dicranella varia (Hedw.) Schimp.
Dicranella rufescens (Dicks) Schp.
Dicranella subulata (Hedw.) Schp.
Dicranella rubra var. *tenella.*
Blindia acuta (Huds.) B. & S.
Dicranowesia crispula (Hedw.) Lindb.

Dicranowesia crispula var. *nigrescens.*
Dicranodontium denudatum (Brid.) Hag.
Dicranum albicans B. & S.
Dicranum Bergeri Bland.
Dicranum Bonjeani DeNot.
Dicranum Drummondii Muell.
Dicranum elongatum Schleich.
Dicranum falcatum Hedw.
Dicranum fragilifolium Lindb.
Dicranum fuscescens Turn.
Dicranum fuscescens falcifolium Braith.
Dicranum Muhlenbeckii B. & S.
Dicranum Schisti Lindb.
Dicranum scoparium (L.) Hedw.
Dicranum Starkei W. & M.
Dicranum strictum Schleich.
Dicranum undulatum Ehrh.

Order VII. FISSIDENTACEÆ.

Fissidens adiantoides (L.) Hedw.
Fissidens grandifrons Brid.
Fissidens incurvus Web. & Mohr.
Fissidens taxifolius (L.) Hedw.

Order VIII. GRIMMIACEÆ.

Subgenus Scouleria.
Grimmia aquatica Hook.
Subgenus Schistidium.
Grimmia apocarpa (L.) Hedw.
Grimmia apocarpa var. *rivularis* W. & M.
Grimmia conferta (Funck) B. & S.
Grimmia brunnescens (Limpr.) Par.
Grimmia atricha C. M. & Kindb.
Grimmia Dupreti Ther.
Grimmia apocarpa var. *gravilis* Schleich.
Grimmia agassizii Lesq. & James.
Subgenus Eu-grimmia.
Grimmia alpestris Schleich.
Grimmia ambigua Sulliv.
Grimmia anomala Hampe.
Grimmia Californica Sulliv.
Grimmia pulvinata (L.) Smith.
Grimmia ovata (Lindb.) Schwaeg.
Grimmia pennsylvanica Schwaeg.
Grimmia tenerrima R. & C.
Grimmia torquata Grev.
Grimmia trichophylla Grev.
Rhacomitrium aciculare (L.) Brid.
Rhacomitrium affine (Schleich.)
Rhacomitrium canescens (Hedw.) Brid.
Rhacomitrium canescens var. *ericoides* B. & S.
Rhacomitrium depressum Lesq.
Rhacomitrium fasciculare (Schrad.) Brid.
Rhacomitrium heterostichum (Hedw.) Brid.
Rhacomitrium lanuginosum (Ehrh.) Brid.
Rhacomitrium microcarpum Brid.
Rhacomitrium patens (Dicks.) Hub.
Rhacomitrium sudeticum (Funk.) B. & S.
Hedwegia albicans (Web.) Lindb.

Order IX. TORTULACEÆ.

Pottia Heimii Fuernr.
Barbula cylindrica (Tayl.) Schimp.
Barbula fallax Hedw.
Barbula unguiculata (Huds.) Hedw.
Barbula vinealis Braun.
Tortula aciphylla Hartm.
Tortula brachyangia C. M. & Kindb.
Tortula mucronifolia Schwaeg.
Tortula ruralis (L.) Ehrh.
Desmatodon latifolius (Hedw.) Brid.
Desmatodon latifolius var. *muticus* (Hedw.) Brid.
Didymodon rubellus (Hoffm.) B. & S.
Tortella tortusa (L.) Limpr.
Gymnostomum curvirostre (Ehrh.) Hedw.
Gymnostomum rupestre Schleich.

Order X. ENCALYPTACEÆ.

Encalypta contorta (Wulf.) Lindb.
Encalypta ciliata Hedw.
Encalypta procera B. & S.
Encalypta rhabdocarpa Schwaeg.
Encalypta vulgaris Hedw.

Subgroup II. Diplolepideæ.

A. Diplolepideæ Acrocarpæ.

Order XI. ORTHOTRICHACEÆ.

Amphidium lapponicum (B. & S.) Schimp.
Orthotrichum anomalum var. *saxatile* Milde.
Orthotrichum lævigatum Zett.
Orthotrichum obstusifolium Schrad.
Orthotrichum rupestre Schleich.
Orthotrichum speciosum Nees.

Order XII. SPLACHNACEÆ.

Splachnum sphæricum L.
Tetraplodon angustatus (S.W.) B. & S.
Tetraplodon bryoides (Zoeg.) Lindb.
Tayloria lingulata Lindb.
Tayloria serrata (Hedw.) B. & S.

Order XIII. Funariaceæ.

Funaria hygrometrica (L.) Sibth.

Order XIV. Meesiaceæ.

Meesia trichodes (L.) Spruce.
Paludella squarrosa L. Brid.
Aulicomnium androgynum Schwaeg.
Aulicomnium palustre (L.) Schwaeg.

Order XV. Timmiaceæ.

Timmia austriaca Hedw.
Timmia austriaca brevifolia Ren. & Card.
Timmia megapolitana Hedw.

Order XVI. Bartramiaceæ.

Catoscopium nigritum Brid.
Anacolia Menziesii (Turn.) Schimp.
Bartramia ithyphylla Brid.
Bartramia Oederi (Gunn) Swtz.
Bartramia Oederi var. *minor* Kindb.
Bartramia pomiformis (L.) Hedw.
Bartramia subulata B. & S.
Conostomum boreale Swartz.
Philonotis calcarea Schp.
Philonotis fallax Dism.
Philonotis fontana (L.) Brid.
Philonotis tomentella Mol.

Order XVII. Bryaceæ.

Leptobryum pyriforme (L.) Wils.
Webera albicans Schp.
Webera annotina Schwaeg.
Webera canaliculata C. M. & Kindb.
Webera Columbica Kindb.
Webera gracilis DeNot.
Webera pulchella (Hedw.) Schimp.
Webera carnea (L.) Limpr.
Webera nutans (Schreb.) Hedw.
Webera cruda (L.) Lindb.
Bryum argenteum L.
Bryum Atwateriæ (Muell.) L. & J.
Bryum cæspiticium L.
Bryum crassirameum R. & C.
Bryum schleicheri var. *latifolium* Schimp.
Rœllia lucida (E. G. Britton) Kindb.
Leucolepis acanthoneura (Schwr.) Lindb.
Mnium affine Bland.
Mnium affine rugicum (Laur.) B. & S.
Mnium Blyttii B. & S.
Mnium glabrescens Kindb.
Mnium orthorrhynchum (Brid.) B. & S.
Mnium punctatum L.
Mnium punctatum elatum Schimp.
Mnium rostratum Schwaeg.
Mnium serratum Schrad.
Mnium spinulosum B. & S.
Mnium subglobosum B. & S.
Mnium venustrum Mitt.

B. Diplolepideæ Pleurocarpæ.

Order XVIII. Fontinalaceæ.

Fontinalis crypheadelphis var. *robustus* (C. M.) Card.
Fontinalis nitida Kindb. & Card.
Dichelyma falcatum Myrin.

Order XIX. Neckeraceæ.

Neckera Menziesii Hook.

Order XX. Leucodontaceæ.

Leucodon sciuroides (L.) Schwaeg.
Antitrichia curtipendula var. *gigantea* Sulliv. & Lesq.
Antitrichia californica Sulliv.
Porotrichum alopecurum (L.) Mitt.

Order XXI. Leskeaceæ.

Myurella careyana Sulliv.
Myurella julacea (Vill.) B. & S.
Leskea arenicola Best.
Pterigynandrum filiforme (Timm.) Hedw.
Pterigynandrum filiforme var. *minus* L. & J.
Heterocladium procurrens (Mitt.) Rau. & Herv.
Pseudoleskea atrovirens (Dicks) B. & S.
Pseudoleskea catenulata B. & S.
Pseudoleskea denudata Best.
Pseudoleskea oligoclada Kindb.
Pseudoleskea radicosa (Mitt.) L. & J.
Pseudoleskea rigescens (Wils.) Lindb.
Thudium abietinum (L.) B. & S.
Thudium Blandovii (W. & M.) B. & S.
Thudium delicatulum (L.) Mitt.
Thudium recognitum (Hedw.) Lindb.
Claopodium crispifolium (Hook.) R. & C.
Claopodium Whipplcanum (Sulliv.) R. & C.

Order XXII. Hypnaceæ.

Climacium Americanum Brid.
Climacium dendroides (L.) Web. & Mol.
Pylaisia intricata (Hedw.) Card.
Camptothecium lutescens (Hook.) B. & S.
Camptothecium nitens (Schreb.) Schimp.
Camptothecium pinnatifidium (S. & L.) Jaeg.
Brachythecium albicans (Neck.) B. & S.
Brachythecium asperrimum Mitt.
Brachythecium campestre B. & S.
Brachythecium collinum (Schleich.) B. & S.
Brachythecium flexicaule R. & C.
Brachythecium glaciale B. & S.
Brachythecium lamprochryseum C. M. & Kindb.
Brachythecium lamprochryseum var. *giganteum* Grout.
Brachythecium oxycladon (Brid.) J. & S.
Brachythecium plumosum (Sw.) B. & S.
Brachythecium plumosum var. *homomallum* B. & S.
Brachythecium populeum (Hedw.) B. & S.
Brachythecium reflexum (Starke.) B. & S.
Brachythecium rivulare B. & S.
Brachythecium rutabulum (L.) B. & S.
Brachythecium salebrosum (Hoffm.) B. & S.
Brachythecium Starkei (Brid.) B. & S.

Suborder Hypnum.

Campylium.
Hypnum chrysophyllum (Brid.) Bryhn.
Hypnum polyganum Schimp.
Hypnum stellatum (Schreb.) Bryhn.
Drepanocladus.
Drepanocladus aduncus (Hedw.) Warnst.
Drepanocladus aduncus (Hedw.) Warnst var. *Kneiffi* Schimp.
Drepanocladus aduncus var. *gracilescens forma teneus* Schimp.
Drepanocladus aduncus var. *aquaticus* Sanio.
Drepanocladus exannulatum Guemb.
Drepanocladus exannulatus brachydictyon Ren.
Drepanocladus fluitans var. *Jeanbernati* (Ren.).
Drepanocladus fluitans (Dill.) Warnst.
Drepanocladus fluitans var. *falcifolium* (Ren.).
Drepanocladus intermedius (Lindb.) Warnst.
Drepanocladus Sendtneri (Sch.) Warnst.
Drepanocladus revolvens (Sw.) Warnst.
Drepanocladus uncinatus (Hedw.) Warnst.
Drepanocladus uncinatus var. *symetricum* R. & C.
Drepanocladus uncinatus var. *plumulosus* (B. & S.) Roth.
Drepanocladus vernicosus (Lindb.) Warnst.
Drepanocladus vernicosus var. *majus* Lindb.
Eurynchium diversifolium (Schleich) B. & S.
Eurynchium fallax (R. & C.) Grout.
Eurynchium oregonum (Sulliv.) Jaeger & Sauerb.
Eurynchium prælongum (L.) Bryhn. var. *Stokesii* (Turn.) Dixon.
Plagiothecium denticulatum (L.) B. & S.
Plagiothecium piliferum (Sw.) B. & S.
Plagiothecium pulchellum (Dicks.) B. & S.
Plagiothecium roseanum (Hampe) B. & S.
Plagiothecium striatellum (Brid.) Lindb.
Amblystegiella confervoides (Brid.) Loeske.
Amblystegiella Sprucei (Bruch.) Loeske.
Amblystegiella subtilis (Hedw.) Loeske.
Amblystegium compactum (C. Muell.) Aust.
Amblystegium fluviatile (Sw.) B. & S.
Amblystegium Juratzkanum Schimp.
Amblystegium Kochii B. & S.
Amblystegium riparium longifolium (Schultz) B. & S.
Amblystegium noterophilum (Sulliv.) Warns.
Amblystegium riparium (Hedw.) B. & S.
Amblystegium serpens (L.) B. & S.
Amblystegium subtile (Hedw.) B. & S.
Amblystegium varium (Hedw.) Lindb.
Amblystegium filicinum (L.) DeNot.

Drepanium.
Hypnum arcuatus Lindb.
Hypnum circinale (Hook.) Broth.
Hypnum plicatulus.
Hypnum pratensis (Koch.) Warnst.
Hypnum subimponens Lesq.
Hynum callichroum Wils.
Hypnum revolutum (Mitt.) Lindb.
Hypnum crista-castrensis L.
Hygrophypnum.
Hypnum arcticum Sommerf.
Hypnum Bestii Ren. & Bryhn.
Hypnum dilatatum (Wils.) Loeske.
Hypnum molle (Dicks.) Broth.
Hypnum molle var. *Schimperianum* Schimp.
Hypnum ochraceum (Turn.) Loeske.
Hypnum palustre (Huds.) Loeske.
Hypnum scorpoides L.
Calligeron.
Calligeron giganteum (Schimp.) Kindb.
Calligeron sarmentosum (Wahlenb.) Kindb.
Calligeron Schreberi (Willd.) Grout.
Calligeron stramineum (Dicks.) Kindb.
Calligeron turgescens Schimp.
Hylocomium.
Hylocomium proliferum (L.) Lindb.
Hylocomium triquetrum (L.) B. & S.
Hylocomium loreum (L.) B. & S.
Hylocomium rugosum (Ehrh.) DeNot.
Hylocomium robustum (Hook.) Kindb.

REPORT ON A COLLECTING TRIP TO GARIBALDI PARK, B.C.

By G. A. Hardy.

A short visit was made to this district between July 24th and August 12th, 1926, for the purpose of obtaining material for the Museum; an excellent opportunity being afforded by the establishment of a camp there by Mr. Bell-Irving, of Vancouver, and the British Columbia Mountaineering Club. This arrangement proved very satisfactory in many ways, not the least being the minimum amount of expense.

Mount Garibaldi Park is an extensive tract of mountainous country, situate to the north and east of the head of Howe Sound, averaging from 3,000 to close on 9,000 feet altitude, forming part of the Coast Range. It takes its name from the dominant peak, Mount Garibaldi, 8,925 feet, which lies near the centre of the park.

Headquarters were situated on the eastern part of the famous Black Tusk Meadows, which lie at an approximate altitude of 5,200 feet. At this point the meadows consist of a gently sloping plateau some two miles by three-quarters of a mile, lying east and west. Several small creeks and rivulets intersect it, the chief of which, Parnassus Creek, lies towards the base of Black Tusk Ridge, from which it has its source. The banks of this creek are a veritable rock garden, the flora being of unsurpassed beauty and luxuriance. Clumps of *Abies lasiocarpa* (mountain fir) and *Tsuga mertensiana* (mountain hemlock) are dispersed about the surface of the meadows, giving a very park-like character; the open ground between is clothed with a carpet of *Phyllodoce* (false heather) and *Spiræa pectinata*. The lower or western end merges into the forest, which everywhere clothes the lower slopes descending into the valley of the Cheakamus River.

Black Tusk Ridge, 6,000 feet, rises steeply to the north of the meadows, forming its boundary in that direction, leading to Black Tusk itself (7,350 feet), a little beyond. On the summit of the ridge near the precipitous base of the peak are the glaciers and snow-patches referred to farther on.

The southern border of the meadows is marked by an abrupt drop to the shores of Lake Garibaldi, 4,840 feet, a deep glacial lake 3 miles long by 2 wide, with precipitous shores, its outlet leading to Lesser Garbaldi. The peak of Mount Garibaldi is seen rising above the surrounding snow-field to the south of the lake.

The eastern boundary (of the meadows) is formed by Mimulus Creek, which tumbles into the lake in a series of cascades; rising steeply from its eastern bank is Panorama Ridge, 6,700 feet, a fine entomological hunting-ground. It continues as a narrow ridge to the east, its northern face giving rise to a part of the extensive Helmit Glacier, in turn flowing into the Helmit Valley to the east of Black Tusk. Several hours' strenuous journeying to the east of Panorama Ridge brings one to Gentian and Polemonium Ridges, 7,500 feet.

The territory thus briefly outlined constituted the chief collecting-ground. Trips were made to other parts as opportunity offered.

Much rainfall and unsettled weather prevailed during the initial week, considerably retarding operations; advantage of which was taken by attending to a few traps set out for small mammals, and investigating fallen logs and under stones for insects, etc. The latter part of the period was ideal collecting weather, and partially compensated for the previous inclemency.

The itinerary was briefly as follows: Departure from Victoria on the evening of July 23rd; then by boat the following morning from Vancouver to Squamish, at the head of Howe Sound, reached about noon; thence by Pacific Great Eastern through the gorge of the Cheakamus to Daisy Lake, some 20 miles farther up. Here a stop-over was made for the rest of the day in order to make a few investigations. A start for camp at Black Tusk Meadows was made early the next day, arriving in the evening after a pleasant and instructive walk up the excellent trail recently constructed. The distance from Daisy Lake Station is about 13 miles, through continuous forest, rising from an altitude of 1,200 to 5,200 feet.

The main objective on this occasion was botanical and entomological, the latter especially, as no records are extant regarding it. In the former no material from this district was represented in the Herbarium.

Botany.

The region collected over, as judged by its flora, comes within the Hudsonian and Arctic zones, with a sprinkling of the Canadian on the lower or more sheltered portions. The various zones imperceptibly merge and can only be appreciated by making lists of the species at various

points and "averaging up." In typical locations they can easily be appreciated, but as much depends on exposure, slope, etc., in many cases it is hard to say where the one begins and the other leaves off.

No species below the Canadian zone (4,000-foot level) were collected, but it was instructive to note the change of flora from the Transition of Daisy Lake, up through the Canadian to the Hudsonian at camp. In the former the conifers included Douglas fir (*Pseudotsuga mucronata* Raf.), red cedar (*Thuja plicata* Donn.), hemlock (*Tsuga heterophylla* Sarg.), and lodgepole pine (*Pinus contorta* Dougl.), with deciduous trees of birch (*Betula occidentalis* Hook.), cottonwood (*Populus trichocarpa* T. & G.), and alder (*Alnus rubra* Bong.), the chief underbrush being devil's-club (*Fatsia horrida* B. & H.), elder (*Sambucus glauca* Nutt), and huckleberry (*Vaccinium parvifolium* Smith). These gradually dropped out with the increasing altitude and were replaced by yellow cedar (*Chymæcyparis nootkatensis* (Lamb) Spach), which predominated at 4,000 feet, with hemlock still abundant. The latter was soon usurped by the mountain hemlock (*Tsuga mertensiana* Carr.), while mountain fir (*Abies lasiocarpa* (Hook) Nutt.) was noticeably on the increase. Deciduous trees disappeared near the 3,000-foot level. At 4,000 to 5,000 feet the chief undershrub was *Vaccinium macrophyllum* Hook. and *Rhododendron albiflorum* Hook., while the dominant trees were mountain fir and mountain hemlock, with a sprinkling of stunted yellow cedar and an occasional white pine (*Pinus monticola* Dougl.). At the extreme limit of timber *Juniperus communis montana* Ait. occurred sparingly, forming dense mat-like growths.

From Daisy Lake to close on the 5,000-foot level the trail never leaves the dense forest until about 4,000 feet elevation, when the latter becomes interspersed with open spaces, finally dispersing into park-like clumps at the site of the camp, vanishing altogether near 6,000 feet.

Approximately 200 specimens of plants were obtained, consisting of about 100 species; of these, eleven are new to the Herbarium, while of the remainder, none hitherto existed from this region in our collection. Where not otherwise indicated, the majority of species have been determined by Harold St. John. Those marked with an asterisk are new to the Herbarium.

Polypodiaceæ (Fern Family).

Cryptogramma acrostichoides R.Br. (Parsley Fern).
Cystopteris fragilis (L.) Bernh. (Brittle Bladder Fern).
Phegopteris dryopteris (L.) Fee. (Oak Fern). Mouth of Mimulus Creek.
Polystichum lonchitis (L.) Roth. (Holly Fern). Black Tusk Ridge.
Woodsia oregona D. C. Eaton (Oregon Woodsia). Black Tusk Slopes and Ridge.

Ophioglossaceæ (Adder's Tongue Family).

**Botrychium lanceolatum* (Gmel.) Angstroem. Black Tusk Slopes.
Botrychium simplex E. Hitch. (Little Grape Fern). In grassy places by streams.

Pinaceæ (Pine Family).

Juniperus communis var. *montana* Ait. Frequent at 6,000 feet.

Gramineæ (Grass Family).

(Identified by A. S. Hitchcock.)

Aira atropurpurea Wahl. Shores of Lake Garibaldi.
Agrostis idahœnsis Nash. (Bent Grass). Gentian Ridge.
**Poa lettermanni* Vasey. Near the summit of Mount Garibaldi. Collected by Don Munday. This is the only recorded British Columbia locality for this species, one other record having been published. *See* Report of Botanical Office, 1915, J. Davidson.)
Poa arctica R.Br. Lake Garibaldi.
Poa alpina L. Black Tusk Ridge.
Trisetum spicatum (L.) Richter. Black Tusk Ridge.

Liliaceæ (Lily Family).

Tofieldia intermedia Rydb. (False Asphodel). Black Tusk Meadows.

Orchidaceæ (Orchid Family).

**Habenaria saccata* Greene.
Habenaria dilatata (Purch.) Gray (Tall White Bog Orchis).

Salicaceæ (Willow Family).

(Identified by C. R. Ball.)

Salix anglorum Cham. (Angled Willow). Black Tusk Slopes, in open grassy places.
**Salix commutata denudata* Bebb. Black Tusk Slopes. Thickets along Parnassus Creek.
Salix nivalis Hook. (Arctic Willow). Panorama Ridge, Black Tusk Ridge. Forming mat-like growth at 6,000 feet.

Polygonaceæ (Buckwheat Family).

Polygonum viviparum L. (Knotweed). Very local, shore of Lake Garbaldi.
Oxyria digyna (L.) Hill (Mountain Sorrel).

Caryophyllaceæ (Pink Family).

**Arenaria sajanensis* B. L. Robins. In silt pocket. Panorama Ridge; Black Tusk Ridge.
**Stellaria lata* (Richards) Rydb. Panorama Ridge.
Stellaria borealis Bigel. (Northern Stichwort). Along the sheltered stream-banks, Black Tusk Slopes, etc.
Silene Macounii S. Watson. Panorama Ridge. Only seen in this locality.
Sagina occidentalis S. Wats. Black Tusk Ridge.
Silene acaulis L.

Ranunculaceæ (Crowfoot or Buttercup Family).

Caltha leptosepala DC. (Alpine Marigold). In fruit, Black Tusk Meadows.
Ranunculus Eschscholtzi Schlecht. (Alpine Buttercup). Black Tusk Ridge.
Trollius albiflorus Rydb. (Globeflower). In fruit, Black Tusk Meadows.

Cruciferæ (Mustard Family).

Arabis Lyallii Wats.
Arabis Drummondii Gray (Drummond's Rock Cress).
**Cardamine kamtschatica* (Regel) Schulz. On banks of streams; Black Tusk Meadows.
Draba stenoloba Ledeb.

Crassulaceæ (Orpine Family).

Sedum divergens Wats. (Stonecrop). Panorama Ridge, Lake Garibaldi.

Saxifragaceæ (Saxifrage Family).

Leptarrhena amplexifolia (Sternb.) Ser. (Pear Leaf). Black Tusk Meadows.
Mitella Breweri Wats. Black Tusk Slopes.
Mitella pentandra Hook. Black Tusk Mountain and Slope. More common than the preceding.
Parnassus fimbriata Koenig. (Grass of Parnassus).
Ribes laxiflorum Pursh. (Mountain Currant).
Saxifraga Bongardi (Presl.) Pursh. Black Tusk Slope in moist places.
Saxifraga austromontana Weigand. (Mountain Saxifrage). In rock crevices at 6,000 feet and over.
Saxifraga Lyallii Engler. (Lyall's Saxifrage). Moist places on Black Tusk Slopes.
Saxifraga Mertensiana Bong. (Spotted Saxifrage). Black Tusk Slopes.
Saxifraga odontoloma Piper. (Toothed Saxifrage). Edge of stream, Black Tusk Meadows and Slopes.
Saxifraga rhomboidea L. (Alpine Saxifrage). By rivulets on Black Tusk Slopes.
Saxifraga Tolmei T. & G. On all the higher mounts above timber-limit.
Tiarella unifoliata Hook. (Simple-leaved Mitrewort).

Rosaceæ (Rose Family).

Lutkea pectinata (Pursh.) Kuntz. (Alpine Spiræa). Forms carpets in open woodland. Black Tusk Meadows, etc.
Potentilla dissecta Pursch. (Cinquefoil).
Potentilla flabellifolia Lehm. (Fan-leaved Cinquefoil).
Potentilla villosa Pall. (Hairy Cinquefoil).
Rubus parviflorus Nutt. (Thimbleberry). In wood, east shore of Lake Garibaldi.

Leguminosæ (Pea Family).

Lupinus subalpinus Piper (Alpine Lupine). Abundant in the Meadows.

Empetraceæ (Crowberry Family).

Empetrum nigrum L.

Onagraceæ (Evening Primrose Family).

Epilobium alpinum L. (Alpine Willow-herb).
Epilobium latifolium L.
Epilobium luteum Pursh. (Yellow Willow-herb). Flowers later than the others.

Umbelliferæ (Parsley Family).

Heracleum lanatum Michx. (Cow Parsnip). An excellent attraction to insect-life.
**Osmorrhiza obtusa* (C. & R.) Fernald.

Ericaceæ (Heath Family).

Cassiope Mertensiana (Bong.) D. Don.
Phyllodoce empetriformis Don.
Phyllodoce glanduliflorus (Hook.) Cov.
Kalmia polifolia Wang. (American Laurel). Black Tusk Mountain, Helmit Valley.
Rhododendron albiflorum Hook.
Gaultheria myrsinites Hook. (Mountain Teaberry). Black Tusk Slopes. Forms low, compact beds often associated with *Salix nivalis*, of similar habit.
Pyrola secunda L. (One-sided Wintergreen). Shore of Lake Garibaldi, on edge of wood.
Vaccinium cæspitosum Michx. (Dwarf Bilberry).
Vaccinium membranaccum (Hook.) Piper. A plant occasionally found with the fungus *Calyptospora columnaris* (Alb. & Schw.) Kuhn., growing on and enclosing the stem completely, with only the leaves showing. The fungus was identified by F. L. Heald, per H. St. John.
Vaccinium ovalifolium Sm. (Oval-leaved Bilberry).

Gentianaceæ (Gentian Family).

**Gentiana glauca* Pall. (Glaucous Gentian). Gentian Ridge, 7,800 feet, growing on grassy edge of dry snow-water pool.

Polemoniaceæ (Phlox Family).

**Polemonium confertum* Gray. Polemonium Ridge. In crevices of rocks.
Phlox Douglasii Hook.

Hydrophyllaceæ (Water-leaf Family).

Phacelia sericea Gray.

Scrophulariaceæ (Figwort Family).

Castilleja oreophila Greenman. Chiefly the pale form, common in damp places.
Castilleja angustifolia var. *Bradbury* Fernald.
Castilleja miniata Dougl.
Mimulus alpinus (Gray) Piper (Alpine Monkey Flower).
Mimulus Lewisii Pursh.
Pentstemon Menziesii Hook.
Pentstemon procerus Dougl.
Pedicularis bracteosa Benth. Locally known as "Ground-hog Weed."
Pedicularis racemosa Dougl. Black Tusk Slope.
Veronica alpina L. (Alpine Speedwell).

Valerianaceæ (Valerian Family).

Valeriana sitchensis Bong. One of the most abundant blooms in the mountain meadows.

Campanulaceæ (Bluebell Family).

Campanula rotundifolia L. (Harebell). Parnassus Ridge.

Compositæ (Composite Family).

Anaphalis margaritacea Benth.
Achillea millefolium L. (Yarrow).
Agoseris aurantiaca (Hook.) Greene.
**Agoseris carnea* Rydb.
Arnica latifolia Bong. Common in mountain meadows.
Arnica alpina L. Black Tusk Slopes.
Artemisia norvegica saxatilis (Besser) Hall & Clements.
Aster foliaceus Lindl.
Erigeron acris var. *debilis* Gray.
Erigeron compositus Pursh. Panorama and Gentian Ridges.
Erigeron compositus var. *discoideus* Gray. Black Tusk Ridge.
Erigeron salsuginosus (Rich.) Gray.
Hieracium gracile Hook. (Alpine Hawkweed).
Petasites frigida (L.) Fries. (Alpine Coltsfoot).
Senecio triangularis Hook. Abundant on the meadows.
Senecio Freemontii T. & G. Among loose rock and scree.
Solidago algida Piper. At high altitudes in pockets of silt in rock crevices.
Antennaria rosea Greene.
Antennaria Macounii Greene.
Senecio pauciflorus Pursh. Panorama Ridge and shore of Lake Garibaldi.

ENTOMOLOGY.

Very little is known concerning the insect fauna of the Garibaldi Park District, so that special attention was paid to this section.

The number of specimens obtained in all orders was about 700. At present the Macrolepidoptera and Coleoptera are the only orders which have been worked up to any degree, and are listed below under their separate headings, where due acknowledgment to the various authorities consulted is made.

Lepidoptera.

Rhopalocera (Butterflies).

Owing to the inclement weather experienced, the collections in this order were not as large as anticipated, nearly all the specimens being taken between August 1st and 10th, the latter part of July being quite unproductive.

Some twenty-one species and varieties of diurnals were taken. From the condition of many of the specimens it is evident that they had emerged sometime earlier and had consequently not been improved by the buffeting of the rain and wind.

For the identification of all material in this order our best thanks are due to Mr. E. H. Blackmore, of Victoria, and through him to Dr. J. McDunnough, of Ottawa, who determined a few of the more difficult species. The species submitted to the latter are preceded by an asterisk. We are also indebted to Mr. Blackmore for the annotations (in brackets) after each species. The list is as follows:—

Papilio zelicaon Lec. One specimen only obtained, flying near the top of Panorama Ridge at an altitude of 6,000 feet.

Parnassius smintheus Dbldy. & New. Several newly emerged individuals were taken on Black Tusk Slopes and Panorama Ridge. (This species occurs on all the mountain-tops of British Columbia from the Rocky Mountains to Lillooet and north to the Yukon Boundary.)

Pieris napi marginalis Scud. Black Tusk Slopes. (This is primarily a lowland form.)

Eurymus nastes streckeri Gr. Gr. One only, flying about *Valeriana sitchensis* on Panorama Ridge. (This is a high-altitude form and is rather rare in collections. It has been taken previously on Mount McLean (8,000 feet) and on Pearson Mountain (7,000 feet), 25 miles west of Penticton.)

Œneis beani Elwes. One taken in numbed condition on Black Tusk Glacier; one or two others seen on Panorama Ridge. Also recorded from Mount Luxor by C. Berkeley in "B.C. Mountaineer." This was taken by Mr. Hossie at about the same time. (This species, although

confined to high altitudes, is rather local. It has only been recorded previously from two other localities, the top of Mount McLean and on Big Bar Mountain, in the Cariboo District.)

Erebia vidleri Elwes. Two specimens, on flowers of *Valeriana sitchensis;* one in a perfectly fresh condition and probably newly emerged. Panorama Ridge. (This is a more or less common species throughout Southern British Columbia at elevations of 4,000 feet and up.)

Argynnis hydaspe sakuntula Skin. One worn specimen, Black Tusk Meadows. (This form is only distinguished from *rhodope* Edw. by the complete absence of silver spots on the underside; *rhodope*, although practically unsilvered, always has the marginal lunules of the hind wings silvered.)

Argynnis bischoffi opis Edw. and

Argynnis bischoffi washingtonia B. & McD. Both these forms occurred together, the latter, however, being much more plentiful. Black Tusk Meadows and Panorama Ridge. (These two forms occur on all the higher peaks of the Coast Range and are taken as far north as Atlin; they were recorded in the 1906 B.C. check-list under the name of *euryneme* Edw. and var. *clio* Edw. *Opis* was described in 1874 from specimens taken at Mount Rainier, Wn.)

Brenthis chariclea Schneid. Several specimens taken on Black Tusk Meadows.

Brenthis bellona Fabr. One specimen, Black Tusk Meadows.

Euphydryas anicia Dbldy. & Hew. Very common on the floral slopes and valleys.

Polygonia faunus rusticus Edw. One or two were observed.

Aglais milberti Godt. Four or five freshly emerged specimens.

Vanessa cardui L. Two somewhat worn, large females were taken on Black Tusk Ridge.

Hcodes mariposa Beck.

Heodes helloides Bdv. These were of frequent occurrence, the latter being quite common.

Heodes cupreus Edw. Very scarce and only occurring at high altitudes. Panorama Ridge and Gentian Ridge (7,500 feet). (The first authentic record of this brilliant species was made by Mr. A. Phair in August, 1917, who took several specimens in poor condition on Mount McLean. Odd specimens have been recorded from Revelstoke and Kaslo.)

Plebeius melissa Edw. Very abundant on the lower slopes.

Plebeius aquilo rustica Edw. Scarce; three specimens, summit of Gentian Ridge and Panorama Ridge. (This high-altitude species occurs on all the high peaks throughout the various mountain ranges of the Province and has been recorded from a number of localities.)

Ochlodes sylvanoides Bdv. Two females in good condition were taken. (This is a lowland species, but the specimens taken are much larger and darker than those found at sea-level.)

The rich floral slopes and "draws" of Black Tusk and Panorama Ridge proved the best general habitat of the foregoing, the flowers of *Valeriana sitchensis* being particularly attractive.

Heterocera (Moths).

The Noctuidæ were by far the most in evidence of the larger moths, although at no time abundant. Nearly all listed below are very rare in collections, and one is new to the Province. They were all taken by day, flying erratically in the hot sunshine, about the beds of *Valeriana* before mentioned. Unless otherwise stated, they were obtained on the slopes of Panorama Ridge, which appeared to be the best locality in the neighbourhood of the camp.

In all, approximately 175 specimens of Heterocera were secured—75 Macros and 100 Micros. Only the former have been worked up at present.

Phragmatobia fuliginosa borealis Straud. Two specimens of this uncommon species were taken floating on water, Black Tusk Meadows. (This species is exceedingly scarce in the Province, although I have records from five different localities. Single specimens have been taken at Alberni, Vancouver, and Vernon. Some few years ago they were fairly plentiful one season at Fraser Mills, but since then have become practically extinct.)

Orosagrotis incognita Sm. Short series. One specimen, also taken at "light" at Daisy Lake Lodge (1,200 feet). (This is the most western record of this species. The only previous record for British Columbia was at Mount McLean, where Messrs. Day and Hanham took a nice series in 1921.)

Scotogramma oregonica Wlk. One specimen. (Although having a wide distribution, this is a very scarce species in collections, only one or two individuals having been taken in the various localities. Other records are from Cowichan Lake, V.I., Penticton, Lillooet, and Kaslo.)

PLATE I.

GARIBALDI LEPIDOPTERA.

(× $\frac{1}{1}$).

Fig.

1. *Lasionycta perplexa* Sm.
2. *Autographa excelsana* Straud.
3. *Autographa excelsana* f. *alta* Ottol.
4. *Onconemis pudorata* Sm.
5. *Lasiestra phoca lutcola* Sm.
6. *Anarta poca* B. & B.
7. *Anarta larta* Sm.

PLATE I.

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Anarta poca B. & Benj. (Pl. I., Fig. 6.) Two specimens. (This is an exceedingly good capture and extends its westerly distribution. The species was described by Barnes and Benjamin (Cont. Lep. No. Amer., Vol. V., No. 2, March, 1923) from specimens taken at Pocahontas, Alberta. A pair of specimens taken on Mount Cheam and now in the Canadian National Museum and a single specimen taken by Mr. A. W. Hanham on Mount McLean are apparently all that represented this species hithertofore.)

Anarta lærta Sm. (Pl. I., Fig. 7.) One specimen on Gentian Ridge.

Lasiestra phoca luteola Sm. (Pl. I., Fig. 5.) Several specimens. (The only previous recorded capture of this form was made by Messrs. Day and Hanham, who took a nice series of this and the typical form *phoca* on Mount McLean (7,500 feet) in August, 1921.)

Lasiestra uniformis Sm. One specimen. (This is a very rare species in the Province, our only other record being from Kaslo.)

Lasionycta perplexa Sm. (Pl. I., Fig. 1.) Two specimens. (This is a new record for British Columbia. It is very close to *alberta* B. & Benj. in superficial appearance, but the latter is easily separated from *perplexa* by the more heavily serrate male antennæ. *Perplexa* was transferred from the genus *Lasiestra* by Barnes & Lindsey in 1921.)

Lasionycta rainieri Sm. One specimen. (This species is also rare in collections. Only three other British Columbia records are known to me—Taku River (Bryant), Mount McLean (Phair), and Kaslo (Cockle).)

Oncocnemis pudorata Sm. (Pl. I., Fig. 4.) Two specimens. (One of the most interesting captures. The only previous record is a specimen taken by Mrs. Bicholl at Hope Mountains some twenty years ago.)

Autographa excelsana Straud. (Pl. I., Fig. 2.) One specimen.

Autographa excelsana alta Ottol. (Pl. I., Fig. 3.) A short series of this high-altitude form. It was far more in evidence than any other noctuid. (In 1902 Ottolengui described this as a distinct species under the name *excelsa*, but owing to a rearrangement of genera in Barnes & McDunnough's Check-list of 1917, this name became a homonym, and in 1919 Ottolengui changed it to *alta*. According to Dr. McDunnough, in 1916 Straud gave the name *excelsana* to the form without the dot following the comma, and this name is therefore used for the species with the name *alta* as form norm. Specimens have also been taken at Mount McLean and Kaslo.)

Dysstroma citrata immanata Haw. One specimen in open fir forest at base of Panorama Ridge.

Eulype hastata subhastata Nolc. Quite common. (This race is taken at elevations in many localities in the Province, from Atlin to Kaslo, but so far has not been recorded from Vancouver Island.)

Eupithecia cretaceata Pack. One worn specimen.

Hepialus roseicaput N. & D. Three male specimens. (In the Pan Pacific Entomologist for October, 1925, Barnes and Benjamin, in revising the Hyperboreus group of Hepialus, resurrected *roseicaput* from the synonymy in which it had been placed by Barnes & McDunnough in 1917. The species was originally described in 1893 from a single specimen taken in the mountains near Lytton, B.C. It has been associated with *mathewi* Hy. Edw., but although similar in superficial appearance it is quite distinct; *roseicaput* is a high-altitude species occurring at elevations from 5,000 to 8,000 feet, while *mathewi* occurs at sea-level and is apparently restricted to Vancouver Island and the Lower Fraser Valley. Other records of *roseicaput* are Mount McLean (Hanham), Taku River (Bryant), and a single male specimen taken by Mr. Moilliet at Vavenby.)

Plecoptera.

Perlodes sp. A large species found on glacier and on shore of Lake Garibaldi.

Neuroptera.

Dranella sp.

Odonata.

(Identified by Dr. E. M. Walker.)

Enallagma boreale Selys. Daisy Lake.
Æschna eremita Scudder. Daisy Lake.
Somatochlora semicircularis Selys. Black Tusk Mountain.
Somatochlora ablicincta (Burm.) Black Tusk Mountain.

Coleoptera.

The small collection of Coleoptera has proved to be of some interest, either on account of the rarity or by increasing the known range of several of the species.

Two distinct faunal types exist here, the Hudsonian or northern element having wide northern distribution extending across the continent, and also in some cases into Siberia and Europe; and the Vancouveran, characterized by species having their range along the coastal area from California to Alaska; as an instance of the Hudsonian *Cryptohypnus hyperboreus* Gyll. has an extensive almost circumpolar distribution and has not previously been recorded south of Alaska. Of the Vancouveran, *Betamon californicus* Schaffer has not previously been recorded north of California.

As a matter of interest in this connection, a brief indication of the distribution is inserted in the majority of cases. It will be noticed that the family Elateridæ furnishes the most noteworthy material.

We are under a deep sense of obligation to Dr. E. C. Van Dyke, of Berkeley, Calif., for the determination of the majority of species and all notes of value relative to type localities and distribution; to Mr. R. Hopping, of Vernon, B.C., for identification and information on many species, and to Mr. W. J. Chamberlin, of Corvallis, Ore., who has kindly named the Buprestids; to each and all our best thanks are extended.

New to Canada.

Two species have not hitherto been recorded from Canada:—
Nebria meanyi Van Dyke. Black Tusk Meadows.
Betamon californicus Schaffer. Black Tusk Meadows.

New to British Columbia.

Cryptophyonus hyperboreus Gyll. Black Tusk Meadows.
Ludius decoratus Mann. Black Tusk Meadows.
Nebria meanyi Van Dyke. Black Tusk Meadows.
Betamon californicus Schaffer. Black Tusk Meadows.

The following is the complete list as identified to date:—

Dytiscidæ.

(Aquatic Coleoptera, identified by J. B. Wallis, Winnipeg.)

Agabus hypomelas Mann. Black Tusk Meadows.
Gyrinus picipes Aube. Black Tusk Meadows.

Carabidæ.

Carabus tædatus Fab. One specimen under decaying wood, Black Tusk Meadows. Alaska, and in its various forms to Hudson's Bay Territory and south to California.

Leistus ferruginosus Mann. Not uncommon; with the preceding, also under rotten logs. Parnassus Creek, Helmit Valley. Alaska to Oregon.

Nebria sahlbergi Fisch. Common under stones along stream-bank, Parnassus Creek. Labrador, Alaska, Newfoundland, Oregon, and the variety, Europe and Siberia.

Nebria meanyi Van Dyke. New to Canada; this species has only recently been described from Washington, Pan-Pac. Ent., Vol. 1, page 118. Not common; in the same situations as the foregoing. Parnassus Creek.

Bembidion incertum Mots. Occasional under stones, as preceding. Black Tusk Meadows. Alaska to Michigan, British Columbia.

Trechus chalybeus Dej. Frequent, same as preceding. Alaska to British Columbia, New Jersey, Indiana.

Pterostichus brunneus Dej. Occasional under stones, as previous species.

Amara erratica (*Celia*) Sturm. One specimen taken on glacier. Europe, Siberia, Alaska, British Columbia.

Amara (*Celia*) *subænea* Lec. Several, as preceding. British Columbia, Lake Superior, Newfoundland, Indiana, Colorado.

Harpalus somnulentus Dej. Under stones near bank of stream; scarce. Alaska, British Columbia, California.

Staphylinidæ.

Tilea cavicollis Fauv. On the glacier, Black Tusk Ridge. British Columbia to California.

Cantharidæ.

Silis difficilis Lec. One, on glacier, Black Tusk Ridge. Common in interior of British Columbia (Hopping).

Œdemeridæ.

Calopus angustus Lec. On the glacier, Black Tusk Ridge. This is a wood-borer, the larvæ mining in the heart-wood of dead coniferous trees. Widely distributed from east to west. British Columbia to Newfoundland, New Mexico.

Elateridæ.

Athous rufiventris var. *ferruginosus* Esch. California to Alaska.

Ludius volitans Esch. One specimen on glacier. "N. America" (Leng).

Ludius umbricola Esch. Alaska to British Columbia and Northern California.

Ludius lutescens Fall. Occasionally found on the glacier before mentioned. Originally described from near Banff, Alta., in 1910. This is not uncommon on the mountains near Lake Louise and in the mountains of Eastern British Columbia (Van Dyke).

Ludius angularis Lec. Three specimens on glacier. British Columbia and Oregon.

Ludius æreipennis (Kby.) Black Tusk Meadows.

Ludius weidti Angell. One or two specimens on the same glacier as above. Described from the "Cascade Mountains, British Columbia, altitude 7,000 feet" in 1892. A very rare species, known only from Paradise Valley, Mount Rainier, Wash. (Van Dyke), and the two localities in British Columbia mentioned here.

Ludius decoratus Mann. A single specimen was taken on the glacier on Black Tusk Ridge. A rare boreal species described from Kodiak, Alaska. "Habitat in insula Kadjak rarissime; D. Aolmberg," in 1853. Recorded by Van Dyke from Alaska and Yukon. It is chiefly an inhabitant of the north-westerly part of the continent, from Alaska along the coast to the higher mountains of British Columbia. No previous records from British Columbia are known to me.

Hemicrepidius oregonus (Lec.) Black Tusk Meadows.

Cryptohypnus hyperboreus Gyll. One under stone by stream, Black Tusk Slope. This is a new record for British Columbia. It inhabits Arctic, Europe, and America, Alaska, Yukon, and Hudson Bay Territory, and has never previously been taken so far south.

Cryptohypnus planatus Esch. Quite plentiful under stones on bank of Parnassus Creek, exceeding in numbers all other species. Roots of the grasses and other plants ramified among the stones near which they were found, upon which the larvæ possibly feed.

Cryoptohypnus grandicollis Lec. Occasionally under stones on bank of Parnassus Creek. Although originally described as from "Canada" in 1866, no further data are available as to the locality, though possibly British Columbia. Dr. Van Dyke has records from California. It would appear that the present record is the first recent one for Canada and British Columbia.

Cryptohypnus nocturnus var. *bicolor* Esch. Frequently found with the preceding. Not uncommon in the interior of British Columbia (Hopping). Alaska, Labrador, British Columbia.

Betamon californicus Schaffer. One specimen from the glacier. This is new to Canada. Previously known from California (Van Dyke).

Drasterius debilis Lec. One from the glacier. Another rare species. Known from British Columbia and "farther east," from whence it was originally described.

Elater nigrinus Payk. (Van Dyke). On the glacier. Europe, Siberia, Alaska, Vancouver, Labrador.

Buprestidæ.

Buprestis fasciata var. *langi* Fab. Several taken, resting on leaves of willows at Daisy Lake. Widely distributed across continent in its two forms.

Melanophila drummondi Kby. Abundant. Remains in hemlock-bark (*Tsuga heterophylla*). Flying about newly felled *Abies lasiocarpa*. Northern North America, south to New Mexico, east to Michigan.

Melanophila acuminata (DeG.) On glacier. Atlantic to Pacific, Europe and Asia.

Chrysobothris trinervia Kby. In numbers about newly cut *Abies lasiocarpa*, where they were very actively running or flying in the hot sunshine. They are remarkably agile and readily elude capture. Northern North America and south at higher elevations to Carolina and California.

Ostomidæ.

Ostoma ferruginea (L.) On glacier, Black Tusk Ridge; also found feeding on fungus under bark.

Cucujidæ.

Dendrophagus glaber Lec. One was taken under the bark of a fallen mountain hemlock (*Tsuga mertensiana*). Widely distributed through the northern forests across Canada.

Coccinellidæ.

Hippodamia sp. Several on the glacier. Also reported as abounding on the summit of Black Tusk, where they would probably hibernate.

Melandryidæ.

Serropalpus barbatus (Schall.). On the glacier, Black Tusk Ridge. The larva is a wood-borer. Of wide northern distribution. Circumpolar.

Scarabæidæ.

Aphodius aleutus Esch. As above. Siberia, Alaska, California.

Aphodius aleutus ursinus Mots. Common on the glacier and the meadows. Washington, Oregon, New Mexico.

Cerambycidæ.

Tetropium velutinum Lec. One taken on glacier, Black Tusk Ridge. British Columbia to California.

Rhagium lineatum Oliv. Two specimens, running over bark of newly felled *Abies lasiocarpa*, Black Tusk Meadows. Over the entire North American continent.

Strangalia obliterata Hald. One on glacier, Black Tusk Ridge. British Columbia to California.

Strangalia propinqua Lec. One on flower of *Hieracleum lanatum*, Black Tusk Meadow. British Columbia to California.

Xestoleptura crassipes Lec. Two on glacier, Black Tusk Ridge. British Columbia to California.

Xestoleptura tibialis Lec. Frequent. On flowers on *H. lanatum* and often drowned in bucket water near the tents; one taken under bark of fallen hemlock. British Columbia to California.

Pachyta armata Lec. This fine Longhorn occurred in larger numbers than any of the others, invariably on flowers of *H. lanatum*, occasionally could be taken flying, when it much resembled a bumblebee, both in appearance and action. Black Tusk Meadows. Only to be seen on hot, sunny days. British Columbia to California.

Xylotrechus undulatus Say. One on stump of newly felled *Abies lasiocarpa*. This is very protectingly coloured. It is exceedingly active when alarmed. Continental wide.

Atimia dorsalis Lec. No living examples were found, but many remains occurred in the bark of *Chamæcyparis nootkatensis*. The larvæ tunnel tortuous galleries in the substance of the bark, or immediately beneath, in the sapwood, depending on the thickness of the former. The pupal cell is the slightly enlarged termination of the gallery just beneath the outer surface, the exit being finally completed by the adult, emerging through an elliptical hole. The gallery is filled with tightly packed frass. The bark of some of the trees was quite riddled with their work. Dead or dying trees only were affected. British Columbia to California.

Monochamus oregonensis Lec. Quite abundant about newly felled *Abies lasiocarpa* in hot sunshine only. They were observed running over the bark or busily paired. The white tents proved some attraction, while they occasionally alighted on one's person in the vicinity of the cut wood. British Columbia to California.

Oberea quadricallosa Lec. One on willow-leaf, Daisy Lake. British Columbia to California.

It will be noted that nearly all the Cerambycidæ are essentially "Vancouveran" in distribution.

Chrysomelidæ.

Syneta carinata (Mann). Numerous dead specimens were picked up on the glacier of Black Tusk Ridge.

Adoxus obscurus L. One or two on the glacier; others crawling on herbage, Black Tusk Slopes.

Caligraphus californicus Linell. On the glacier.

Phytodecta artica Mann. Several on the glacier and on leaves of willow (*Salix commutata denudata*). The willows in some cases had numerous ova and young larvæ on the leaves, no pupæ could be found, and adults were very scarce; hence it is presumed that the latter were hibernating individuals. Evidences were that adults would be plentiful in late August.

Hymenoptera.

(Identified at Ottawa, per R. Hopping.)

Tenthredinidæ.

Tenthredo unicinctus Novt. On glacier.

Siricidæ.

Urocerus flavicornis Fab. (Horn-tail). Boring in stump of freshly felled *Abies lasiocarpus.*

Sirex jurencus var. *cyaneus* Fab. Boring in freshly felled stump of *Abies lasiocarpus.*

Ichneumonidæ.

Ephialtes pedalis Cress. On glacier.

Colcocentrus occidentalis Cress.

Amphibia.

Bufo boreas borcas B. & G. (Northern Toad). This was frequently met with about the meadows and floral slopes; all of the specimens encountered were noticeably more brightly and lightly coloured than those of Daisy Lake. Nearly every little lochan had its toad inhabitant, while others were found on the stream-banks, near the old burrows of a chipmunk, into which they retreated when disturbed.

Rana pretiosa pretiosa B. & G. (Spotted Frog). Taken only at Daisy Lake, where it is common.

Ambystoma sp. (Salamander). A badly damaged Salamander, which may be *A. decorticata*, was taken in a mouse-trap on Black Tusk Meadow. Other specimens were reported by members of the camp.

Ornithology.

Buffle-head (*Charitonetta albeola* L.). A half-grown bird was seen on Lake Garibaldi, indicating that they breed in the district. A very close view was obtained and no doubt remains as to its identity.

Least Sandpiper (*Actodroma minutilla* Vieill). A pair were observed on shore of Lake Garibaldi, presumably of this form.

Killdeer Plover (*Ægilitis vocifera* Linn.). One seen and heard near Mimulus Lake.

Sooty Grouse (*Dendragapus obscurus fuliginosus* Ridgway). Common; well-grown young observed also.

Rock Ptarmigan (*Lagopus rupestris rupestris* Gmelin). A hen with eight half-grown young, near Mimulus Lake.

Marsh Hawk (*Circus hudsonius* Linn.). One female, on Black Tusk Meadows.

North-western Flicker (*Colaptes cafer saturatior* Ridgway). On Black Tusk Meadows.

Rufous Hummingbird (*Selasphorus rufus* Gmelin). Repeatedly seen even above timber-line at 6,000 feet.

Olive-sided Flycatcher (*Nuttallornis borealis* Swainson). Occasionally heard calling near camp.

Horned Lark (*Octocoris alpestris arcticola* Ober.). Seen several times at high altitudes, among the snow patches.

Canada Jay (*Perisoreus c. canadensis* L.). Very common and obtrusive around camp.

Clarke's Nutcracker (*Nucifraga columbiana* Wilson). Occasionally seen and more often heard.

Hepburn's Leucosticte (*Leucosticte tephrocotis littoralis* Baird). One or two seen among the snow patches.

Oregon Junco (*Junco hyemalis oreganus* J. K. Townsend). Very common on the meadows.

Dipper (*Cinclus mexicanus* Swainson). Seen on every stream; well-grown young able to fly.

Winter Wren (*Nannus hiemalis pacificus* Baird). A flock seen; one with much white in secondaries.

Red-backed Nuthatch (*Sitta canadensis* Linn.). Heard occasionally near camp in the woods.

Golden-crowned Kinglet (*Regulus s. satrapa* Lich.).

Varied Thrush (*Idoreus nævius* Gmelin). Several pairs seen on Black Tusk Meadows.

Mountain Bluebird (*Sialis currucoides* Bechstein). A small flock seen on one occasion.

Mammals.

Little opportunity was available for the collection of mammals; a few traps, however, were set in the vicinity of the camp, resulting in the following species.

With the exception of the Marmot, they have been examined and determined by Mr. W. C. Henderson, U.S. Dept. of Agriculture, Washington, D.C., to whom we have very much pleasure in conveying our best thanks.

Arrangement followed is that of G. S. Miller, Bull. 128, U.S. Nat. Mus., 1923.

Sorex vagrans vagrans Baird (Shrew). Bank of Parnassus Creek; one specimen.

Marmota caligata cascadensis Howell (Hoary Marmot). Black Tusk Meadows, near Lake Garibaldi. A young specimen, probably of this subspecies. This species is to be found on all the higher slopes. It may often be seen lying motionless on a projecting rock. Their loud penetrating whistle is a characteristic feature of the mountains.

Eutamias amœnus ludibundus (Hollister) (Chipmunk). Black Tusk Meadows; four specimens. This little Chipmunk was abundant everywhere, whether in the sheltered valleys or high up among the screes, wherever a patch of grass could provide food.

Peromyscus maniculatus oreas (Bangs) (White-footed Mouse). Bank of Parnassus Creek; two specimens.

Evotomys gapperi saturatus Rhoads (Vole). Bank of Parnassus Creek; three specimens. One of these was fond of running over the sleepers in the tent. Two are young specimens and lack the rufous tinge of the mature animal.

Zapus trinotatus trinotatus Rhoads (Jumping Mouse). Black Tusk Meadows; one specimen. This had its burrow on flat ground among long grass, away from any bank or root.

In checking up the distribution of the foregoing, it is noted that several in their subspecific forms reach their northern limit in Southern British Columbia, being otherwise found along the coast to California; such are *Z. trinotatus*, *P. oreas*, and *Sorex. v. vagrans*.

Species seen or reported but not taken include the following:—

Black Bear (*Euarctos a. americanus* Pallas). Several times they were seen on the trail between camp and Daisy Lake.

The Puma and Wolves are also reported to occasionally occur in the district.

Little Chief Hare, Pika (*Ochotona f. fenisex* Osgood). Occasionally seen and more often heard among the larger rocks at the foot of the screes. One was observed to be contentedly munching the lichen on the rocks.

Coast Deer (*Odocoilcus c. columbianus* Rich.). One individual was reported at various times in the vicinity of the meadow; the majority of the Deer descend to lower levels in the summer, frequently the "salt-licks."

Mountain-goat (*Oreamus a. americanus* (Blainville)). Reported from Corrie Ridge and also in a previous year in the Helmit Valley, north of Panorama Ridge.

MARINE ZOOLOGY.

The aquaria have been maintained throughout the season, but until it is possible to have running sea-water installed no specially attractive exhibit can be continued with the time at present available for such. A matter of this nature requires much detailed attention to obtain pleasing results.

The small aquaria in use at present have given no trouble in regard to maintaining the "balance" of plant and animal life. The *Vaucheria* used is part of an original piece sent from Essex, England, two years ago by Mr. F. J. Lambert. This has thriven exceedingly and is

PLATE II.

SCALY CRAB.

Placetron wosnessenskii Schalfeew.

(—½)

Breadth of carapace, 7 cm.

Length of carapace, 5 cm. 6 mm.

PLATE II.

superior to anything previously used; the chief advantage is its rapidity of growth, with a consequent plentiful output of oxygen, thus purifying the water and rendering constant changing—the bane of small stagnant marine aquaria—entirely unnecessary.

No new or striking species of fish have been installed, as it is found that the various "tween" tide varieties succeed with the minimum of attention. The clingfish (*Caularchus meandricus*) mentioned in the Museum Report for 1925 lived until August of the past season, being close on fourteen months in captivity. Various anemones, starfish, etc., have from time to time been on exhibit.

Marine accessions are due entirely to the interest and generosity of the public, no systematic field-work having been undertaken by the Museum, although the desirability of such cannot be overestimated, as it lacks anything like a representative marine fauna of the vicinity.

The marine shell-bearing mollusca contained in the Museum and the collection of Mr. W. A. Newcombe have now been completely revised by the kindness of Dr. Bartsch, of Washington, D.C., and the concluding portion, the Univalves, are listed on page 28. Mr. Newcombe has greatly enriched the collection by gifts of many species hitherto unrepresented.

Mr. F. J. Lambert, of Leigh-on-Sea, Essex, England, has manifested his interest by sending further living hydra-tuba stages of various Jelly-fish, *Aurellia*, *Chrysæra*, *Cyanea*, etc., including an excellent account of his observations on the development of certain of these species, and is of special merit. A copy is preserved in the Museum library for the perusal of any one interested. A detailed list of accessions in this section follows:—

Cœlenterata.

Further living and preserved specimens of the young stages of certain Jelly-fish from Leigh-on-Sea, Essex, from Mr. F. J. Lambert.

Annelida.

Serpula Tubes. Thurston Harbour, Q.C.I. (C. P. Johnston).

Arthropoda.

Crustacea.

Pennella balænoptera Koven & Danieleson. A large parasitic copepod taken from the Finback Whale (*Balænoptera velifera* Cope). Cachalot, B.C. (I. E. Cornwall). This is 8 inches to 1 foot long. Mr. Cornwall informs me that it was so numerous on some parts of the whale, particularly under the lower lip, as to simulate a coat of coarse hair.

Coronula regina Darwin (Whale Barnacle). From lower lip and front of flippers of Sei Whale (*Balænoptera borealis* Lesson). Cachalot, B.C. (I. E. Cornwall).

Balanus tintinnabulum californicus Pilsbry. (Barnacle). From S.S. "Gertrude" at William Head, V.I. (I. E. Cornwall).

Lepas hilli (Leach) (Hill's Goose Barnacle). From S.S. "Gertrude," William Head, V.I. (I. E. Cornwall).

Placetron wosnessenskii Schalfeew. (Scaly Crab). (Plate II.). Presented by Rev. R. Connell. This interesting crab was collected by Mr. Sowerby in the inner harbour of Victoria. It constitutes the most southerly record, the nearest previous one being from Graham Island (Miss Mary Rathbun). The normal habitat is in northern waters. This is the first specimen of its kind to be represented in the Museum. A photographic reproduction faces pages 27.

Upogebia pugettensis Dana (Burrowing Crab). Saanich Spit, V.I. (S. Jones).

Prawns. Esquimalt Dry-dock (G. A. Hardy).

Mollusca.

Cryptochiton stelleri (Giant Armadilla Shell). Victoria (E. N. Renouf).

Lamellidoris bilamellata (Sea-slug). Some extra fine specimens taken from the dry-dock at Esquimalt, where they were busily spawning. February 22nd (G. A. Hardy).

Several fine specimens of local clams (G. J. French).

Two species of marine shells (H. Toms).

A selected collection of shells from Port Renfrew and Sooke, V.I., presented by the Star Construction Company. There are several very acceptable species among them; in all, twenty-six species are represented, including many interesting colour variations.

Nudibranch (Sea-slug). William Head, V.I. (I. E. Cornwall).

ECHINODERMATA.

Cucumaria japonica Semper. (Sea-cucumber). Victoria (R. Thomas).

REVISED LIST OF BRITISH COLUMBIA MARINE UNIVALVE MOLLUSCA IN THE MUSEUM AND NEWCOMBE COLLECTIONS.

(ARRANGED ACCORDING TO DALL'S LIST, 1921.)

This is a continuation of the List of Marine Mollusca, commenced in the Report for 1925, page 18, and completes to date the material concerning the marine shell-bearing mollusca in these collections.

For the determination and revision we are again under deep obligation to Dr. Paul Bartsch, of Washington, D.C., for his kindness in checking over most of the material, and also to Mrs. Oldroyd, of Seattle, Wash., who had named many of the smaller species for the late Dr. C. F. Newcombe. We have much pleasure in recording our thanks and appreciation for the invaluable services thus rendered.

As in the previous list, specimens in the Newcombe collection not represented in the Museum are preceded by an asterisk; this is done partly to direct attention to the whereabouts of the particular species, and partly to point out to friends those species which it is desired to obtain to complete the collection in the Museum.

Mr. W. A. Newcombe has generously donated additional species from his collection, while the Star Construction Company at Port Renfrew, V.I., has also kindly presented a small but very acceptable collection of Univalves recently collected on the west coast.

Class SCAPHOPODA.

Family DENTALIIDÆ.

Dentalium rectius Cpr.
Dentalium pretiosum Sowerby.
Cadulus hepburni Dall.
Cadulus tolmei Dall.
Cadulus aberrans Whiteaves.

Class GASTROPODA.

Family CAVOLINIIDÆ.

**Clio occidentalis* Dall.

Family ACTEONIDÆ.

Rictaxis punctocoelata Cpr.

Family ACTEOCINIDÆ.

Acteocina culcitella Gould.
Acteocina eximia Baird.
Retusa harpa Dall.
**Volvulella cylindrica* Cpr.

Family SCAPHANDRIDÆ.

**Diaphana debilis* Gould.
Bullinella alba Brown.
**Bullinella attonsa* Cpr.

Family AKERIDÆ.

Haminœa vesicula Gould.

Family AGLAJIDÆ.

**Aglaja adella* Dall.

Family SIPHONARIIDÆ.

Liriola thersites Cpr.

Family TURRITIDÆ.

Moniliopsis incisa Cpr.
Moniliopsis rhines Dall.
Antiplanes perversa Gabb.
Lora exarata Moller.
**Lora tabulata* Cpr.
Lora fidicula Gould.
**Lora turricula* Montagu.
**Lora violacea* Mighels & Adams.
Mangilia sculpturata Dall.
Mangilia crebricostata Cpr.
Mangilia levidensis Cpr.
**Cytharella victoriana* Dall.

Family Cancellariidæ.

**Sveltia modesta* Cpr.
Sveltia unalashkensis Dall.
**Sveltia circumcincta* Dall.
**Admete couthouyi* Jay.

Family Olividæ.

Olivella biplicata Sowerby.
Olivella bœtica Cpr.

Family Marginellidæ.

Merovia pyriformis Cpr.

Family Chrysodomidæ.

Exilia rectirostris Cpr.
**Aulacofusus roseus* Dall.
Chrysodomus tabulatus Baird.
Chrysodomus smirnius Dall.
Chrysodomus liratus Martyn.
Searlesia dira Reeve.

Family Buccinidæ.

Buccinum plectrum Stimpson.
Buccinum bœri morchianum Fischer.

Family Alectrionidæ.

Schizopyga fossata Gould.
Schizopyga mendica Gould.

Family Columbellidæ.

**Alia tuberosa* Cpr.
Alia gausapata Gould.
**Alia carinata* Hinds.
**Alia carinata californiana* Gaskoin.
Astyris permodesta Dall.
Amphissa columbiana Dall.

Family Muricidæ.

Purpura foliata Martyn.
Tritonalia lurida Middendorff.
Tritonalia interfossa Cpr.
Neptunea dalli Kobelt.
Neptunea multicostata Eschscholtz.
Neptunea orpheus Gould.
Neptunea stuarti E. A. Smith.
Neptunea tenuisculpta Cpr.
Nucella lamellosa Gmelin.
Nucella canaliculata Duclos.
Nucella emarginata Deshayes.

Family Epitoniidæ.

Opalia wroblewskii Morch.
Acirsa borealis (Beck) Lyell.
Nitidoscala indianorum Cpr.

Family Melanellidæ.

**Melanella columbiana* Bartsch.
Melanella comoxensis Bartsch.
Melanella macra Bartsch.
Melanella micans Cpr.
**Melanella rutila* Cpr.
**Melanella oldroydi* Bartsch.

Family Pyramidellidæ.

Chemnitzia engbergi Bartsch.
Strioturbonilla vancouverensis Baird.
Strioturbonilla stylina Cpr.
**Strioturbonilla barkleyensis* Bartsch.
Pyrgolampros victoriana Dall & Bartsch.
**Pyrgolampros newcombei* Dall & Bartsch.
Pyroglampros taylori Dall & Bartsch.
**Pyrgolampros awrantia* Cpr.
**Mormula lordi* E. A. Smith.
**Mormula eschscholtzi* Dall & Bartsch.
**Chrysallida montereyensis* Dall & Bartsch.
Chrysallida oregonensis Dall & Bartsch.
**Menestho pharcida* Dall & Bartsch.
**Evalea quadræ* Dall & Bartsch.
**Evalea skidegatensis* Bartsch.
Evalea willetti Bartsch.
**Evalea inflata* Dall & Bartsch.
Evalea columbiana Dall & Bartsch.
Evalea angularis Dall & Bartsch.
**Evalea stephensæ* Dall & Bartsch.
**Evalea deliciosa* Dall & Bartsch.
**Amaura kennerlyi* Dall & Bartsch.
**Amaura engbergi* Bartsch.
**Amawra talpa* Dall & Bartsch.
**Amaura canfieldi* Dall.

Family Cymatiidæ.

Fusitriton oregonensis Redfield.

Family Cerithiopsidæ.

**Cerithiopsis fraseri* Bartsch.
**Cerithiopsis onealensis* Bartsch.
**Cerithiopsis stejnegeri* Dall.
**Cerithiopsis stejnegeri dina* Bartsch.
**Cerithiopsis signa* Bartsch.
**Cerithiopsis willetti* Bartsch.
Cerithiopsis columna Cpr.
**Cerithiopsis stephensæ* Bartsch.

Family Cerithiidæ.

Stylidium eschrichtii Middendorff.
**Semibittium quadrifilatum* Cpr.

Family Trichotropidæ.

Trichotropis borealis Sowerby.
Trichotropis cancellata Hinds.

Family Cæcidæ.

Micranellum oregonense Bartsch.

Family Vermetidæ.

Bivonia compacta Cpr.

Family Turritellidæ.

Tachyrhynchus reticulatus Mighels.
**Tachyrhynchus lactcolus* Cpr.

Family Littorinidæ.

Littorina sitkana Philippi.
Melarhaphe scutulata Gould.

Family Lacunidæ.

Lacuna divaricata Fabricius.
**Lacuna solidula* Lovęn.
Lacuna variegata Cpr.
**Lacuna unifasciata* Cpr.
Lacuna carinata Gould.
Lacuna vincta Mont.

Family Fossaridæ.

**Iselica fenestrata* Cpr.

Family Litiopidæ.

Diala marmorea Cpr.
**Diala acuta* Cpr.
Barleeia haliotiphila Cpr.
**Barleeia subtenuis* Cpr.

Family Rissoidæ.

**Alvania burrardensis* Bartsch.
**Alvania sanjuancnsis* Bartsch.
**Alvania montereyensis* Bartsch.
Alvania compacta Cpr.

Family Rissoinidæ.

Rissoina newcombei Dall.

Family Syceratidæ.

Syncera translucens Cpr.

Family Hipponicidæ.

Hipponix antiquatus cranioides Cpr.

Family Crepidulidæ.

Crepidula adunca Sowerby.
**Crepidula dorsata* Brod. var. *bilobata* Reeve.
Crepipatella lingulata Gould.
Ianacus nummarius Gould.

Family Calyptræidæ.

Calyptræa fastigiata Gould.

Family Naticidæ.

Crytonatica clausa Broderip and Sowerby.
**Cryptonatica aleutica* Dall.
**Euspira gronlandica* (Beck) Moller.
Euspira lewisii Gould.

Family Lamellariidæ.

**Lamellaria stearnsii* Dall.

Family Velutinidæ.

Velutina prolongata Cpr.
Velutina lævigata (Linnaeus) Muller.

Family Lepetidæ.

Cryptoctenidia cæcoides Cpr.

Family Acmæidæ.

Acmæa mitra Eschscholtz.
Acmæa mitra funiculata Cpr.
Acmæa cassis pelta Eschscholtz.
Acmæa scutum Eschscholtz.
Acmæa scutum patina Eschscholtz.
Acmæa scutum pintadina Gould.
Acmæa scutum cribraria Cpr.
Acmæa scutum parallela Dall.
Acmæa digitalis Eschscholtz.
Acmæa instabilis Gould.

Family Phasianellidæ.

Tricolia pulloidea Cpr.
**Eulithidium luridum* Dall.

Family Turbinidæ.

Pachypoma inæquale Martyn.
Leptothyra carpenteri Pilsbry.
Leptothyra bacula Cpr.
**Leptothyra paucicostata* Dall.

Family Liotiidæ.

**Molleria quadræ* Dall.

Family Trochidæ.

Halistylus subpupoideus Tryon.
Chlorostoma funebrale A. Adams.
Promartynia pulligo Martyn.
Calliostoma costatum Martyn.
Calliostoma annulatum Martyn.
Calliostoma canaliculatum Martyn.
Calliostoma variegatum Cpr.
Cidarina cidaris A. Adams.
Machæroplax varicosus Mighels and Adams.
Pupillaria pupilla Gould.
Lirularia lirulata Cpr.
Margarites helicinus Phipps.
**Margarites albolineatus* E. A. Smith.
**Margarites lævior* Jeffr.

Family Haliotidæ.

Haliotis kamtschatkana Jonas.

Family Fissurellidæ.

**Megatebennus bimaculatus* Dall.
Diadora aspera Eschscholtz.
Puncturella galeata Gould.
Puncturella cucullata Gould.
**Puncturella multistriata* Dall.
**Puncturella cooperi* Cpr.

Family Lepidopleuridæ.

Lepidopleurus cancellatus Sowerby.
**Lepidopleurus rugatus* Cpr.

Family Lepidochitonidæ.

Lepidochitona submarmorea Middendorff.
Lepidochitona lineata Wood.
Lepidochitona flectens Cpr.
Lepidochitona raymondi Pilsbry.
**Nuttallina californica* Reeve.

Family Ischnochitonidæ.

Ischnochiton retiporosus Cpr.
Ischnochiton interstinctus Gould.
Ischnochiton interstinctus var. *radians* Cpr.
Ischnochiton mertensii Middendorff.
**Ischnochiton trifidus* Cpr.

Family Mopaliidæ.

Mopalia ciliata Sowerby.
Mopalia ciliata wosnessenskii Middendorff.
Mopalia muscosa Gould.
**Mopalia muscosa hindsii* Reeve.
Mopalia muscosa lignosa Gould.
**Mopalia muscosa kennerlyi* Cpr.
**Mopalia muscosa swanii* Cpr.
Mopalia imporcata Cpr.
Mopalia sinuata Cpr.
Placiphorella velata Cpr.

Family Acanthochitonidæ.

Katharina tunicata Wood.

Family Cryptochitonidæ.

Cryptochiton stelleri Middendorff.

BUPRESTIDÆ OF VANCOUVER ISLAND.

(Preliminary Annotated List.)

By G. A. Hardy.

The present article may be considered to be an extension of that in the previous report, dealing with the Coleoptera of this region, where the family Cerambycidæ was dealt with.

The territory worked over coincides with that therein outlined. Preference has been given to captures appertaining to the last three years, but no records that could be satisfactorily verified are omitted.

The Buprestidæ is a very large family, having its metropolis in the tropics, where they are noted for the brilliance and variety of colour of many species, and have a very metallic appearance, a character further enhanced by the strength and compactness of structure.

The early stages of their life are spent within the wood or bark of various trees and shrubs, occasionally being sufficiently abundant to be of serious economic importance.

The larvæ or "Flat-headed Borers" are of characteristic shape, the first two or three segments being so greatly enlarged as to give a club-like appearance to the whole. Their existence is usually spent within or under the bark or in the heart-wood, occasionally (*Chrysophana*) in the cones of *Pinus*. The pupal stage is passed within the end of the larval gallery.

The adults are essentially lovers of the hot sunshine, and may be found sunning themselves on the trunks of standing or newly felled trees; the incense emanating from the latter is especially attractive to them. Other species frequent flowers (*Anthaxia*), some rest on leaves or twigs (*Agrilus*). Some are quite sluggish (*Chalcophora* and *Buprestis*), while others, on the contrary, are exceedingly nimble (*Chrysobothris*), taking to the wing as readily as the bluebottle fly.

Nomenclature followed is Leng's "Catalogue of Coleoptera of North America," 1920.

Reference is made in the list to the recently published work on the Buprestidæ of North America by W. J. Chamberlin, an indispensable book to any one engaged in the study of this family.

Popular names are added in recognition of the general demand for such.

Acknowledgments.—We have much pleasure in offering our cordial thanks to Dr. E. C. Van Dyke, of Berkeley, Calif., for his kindness and courtesy in identifying most of the difficult species, together with detailed notes on distribution, etc.; and also to Mr. W. J. Chamberlin, of Corvallis, Ore., Messrs. R. and G. R. Hopping, of Vernon, B.C., and W. S. Fisher, of Washington, D.C., for much valuable assistance in many ways. To the following gentlemen we tender our thanks for the opportunity of examining their collections and help in many other ways: Messrs. E. H. Blackmore, W. Downes, H. P. Eldridge, A. W. Hanham, A. Nichols, and W. H. A. Preece.

Buprestidæ (the Metallic Wood-Boring Beetles).

Chrysophana Lec.

C. placida (Lec.) (Emerald Midget).

A small elegant species, green with bronze sutural and marginal vittæ on elytra; occurs about new Douglas fir lumber and logs (Downes). May to July. Not common, breeds in Douglas fir, etc. Is recorded as feeding in cones of *Pinus attenuata* (Burke). Sidney (W. H. A. P.); Shawnigan (W. D.); Duncan (A. W. H.). Pacific Coast.

Chalcophora Sol.

C. angulicollis (Lec.) (Oregon Buprestid). (Pl. III., Fig. 5.)

The largest North American Buprestid, dark-brownish bronze. Found flying or usually sunning themselves on fallen logs, and rather sluggish. May and June. One record for September. Frequent. Breeds in *Pinus*, *Pseudotsuga*, and *Abies*. Victoria (E. H. B.); Sidney (W. H. A. P.); Goldstream (E. H. B.); Metchosin (J. Thompson); Saltspring Island (P. deN. Walker); Duncan (A. W. H.); Todd Inlet (A. N.); Esquimalt (A. N.). Widely distributed on continent.

PLATE III.

FAMILY BUPRESTIDÆ (METALLIC WOOD-BORING BEETLES).

(Slightly enlarged.)

Fig.

1. *Trachykele blondeli* Mars.
2. *Pœcilonota fraseri* Chamberlin.
3. *Buprestis maculativentris* var. *rusticorum* (Kby.).
4. *Melanophila fulvoguttata* var. *drummondi* (Kby.).
5. *Chalcophora angulicollis* (Lec.).
6. *Anthaxia æneogaster* Cast.
7. *Buprestis aurulenta* L.
8. *Agrilus politus* Say.
9. *Buprestis fasciata* Fab. var. *langi* (Mann).

PLATE III.

1

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Trachykele Mars.

T. opulenta Fall. (Pearly Beauty).

Recorded for Vancouver Island by W. J. Chamberlin (Bup. N.A., page 243).

T. blondeli Mars. (Powder Post Beetle). (Pl. III., Fig. 1.)

A magnificent brilliant green, with shagreen sculpture, ¾ inch long. Usually in the tops of living *Thuja plicata* (Hopping). Rare in collections. May and June. Breeds in *Thuja plicata;* in some localities of serious economic importance, as the larvæ weaken sound timber by their extensive burrows (Hopping). Goldstream (A. W. H.); Shawnigan (on fallen cedar log, G. A. H.). West Coast of North America.

Dicerca Esch.

D. sexualis Cr. (Grey Fork-wing).

About same size as *T. blondeli;* obscure, dark greyish; the tips of elytra bluntly produced. May and June. Pupæ taken under bark of *Abies grandis* (white fir) in August (W. H. A. P.). Not commonly met with. Sidney (W. H. A. P.); Duncan (A. W. H.); Nanaimo (G. W. T.). British Columbia to California.

Pœcilonota Esch.

P. frascri Chamberlin. (Fraser Fork-wing). (Pl. III., Fig. 2.) First record for Vancouver Island.

Somewhat similar in shape to a very small *D. sexualis;* dull bronze. June, July, scarce. Gordon Head near Victoria (on leaves of *Salix Scouleri*, G. A. H.); British Columbia to California. Originally described from "Fraser River," B.C.

Buprestis L.

B. aurulenta L. (June-bug). (Pl. III., Fig. 7.)

About ¾ inch long; brilliant green with copper margin and sutural line to elytra. Usually found on newly felled timber (Douglas fir), April to August. Common. Breeds in Douglas fir (G. A. H.) and white fir (*A. grandis*) (W. H. A. P.). Imagines taken from Douglas fir stump in January. The larva bores in the heart-wood. The last 2 inches of burrow were free from frass and evidently used by the adult long before emergence. The adult gnaws its way out through the outer bark (G. A. H.). Victoria; Goldstream; Shawnigan; Tod Inlet; Sidney; Duncan. British Columbia to California.

B. adjecta (Lec.) (Lesser June-bug).

Very similar to the preceding, but smaller and with finer striations on elytra. June to August, rare. Breeds in *Pinus contorta* (Hopping); Douglas fir (Chamberlin). Shawnigan (R. V. H.); Tod Inlet (on new Douglas fir lumber, A. N.); Sidney (in flight, W. H. A. P.); Duncan (A. W. H.); Nanaimo (G. W. T.). British Columbia to California.

B. maculativentris var. *rusticorum* (Kby.) (Rustic Buprestid). (Pl. III., Fig. 3.)

Length averages ¾ inch; black with æneus reflections. On felled Douglas fir and balsam trunk, June to September. Most records for July and August. Common. Breeds in Douglas fir and balsam. Victoria (E. H. B.); Esquimalt (G. A. H.); Goldstream (G. A. H.); Tod Inlet (A. N.); Sidney (W. H. A. P.); Duncan (A. W H) Alberta and British Columbia to California.

B. fasciata Fab. var. *langi* (Mann) (Lang's Buprestid). (Pl. III., Fig. 9.)

Similar to *B. aurulenta*, but finer elytral striations and absence of coppery margin and more depressed form. The male has usually six well-marked whitish spots on elytra, nearly always absent in the female. June to August. Occasional. Breeds in poplar, maple, willow, and probably Douglas fir and true firs (Chamberlin). Goldstream (R. V. H.); Prospect Lake (W. H. A. P.); Tod Inlet (A. N.); Sidney (on new lumber, W. H. A. P.); Duncan (in flight, A. W. H.); Nanaimo (G. W. T.). Atlantic to Pacific in north, Alaska to California.

Melanophila Esch.

M. fulvogutta var. *drummondi* (Kby.) (Drummond's Buprestid). (Pl. III., Fig. 4.)

A small species, about ¼ inch long; dark bronze-brown, usually with yellow spots on elytra. Actively running or flying about newly felled lumber. April to July, very abundant everywhere. Breeds in Douglas fir and balsam (G. A. H. and W. H. A. P.) and is recorded from a great variety of other trees. Quebec to Alaska and south to California.

M. acuminata (DeG.) (Pointed Buprestid).

Similar to preceding, but more elongate, never spotted, and apical apices of elytra ending in a point. Rare in local collections. August to September. Nanaimo (G. W. T.). A northern species extending across continent in north and south along the mountains, also Europe and Asia. Breeds in coniferous trees.

Anthaxia Esch.

A. æneogaster Cast. (Metallic-Fronted Buprestid). (Pl. III., Fig. 6.)

The smallest of our Buprestidæ; dark brown or black, with indistinct metallic reflections. Found on flowers, particularly yellow ones, such as dandelion and hawkweed. May to July. Not uncommon. Breeds in Douglas fir, Garry oak, and many other trees (*see* Chamberlin). Mount Douglas (G. A. H.); Goldstream (on newly cut Douglas fir, G. A. H.; Shawnigan (W. D.); Tod Inlet (A. N.); Sidney (W. H. A. P.); Duncan (A. W. H.). Transcontinental.

Chrysobothris Esch.

All species of this genus are very much alike and difficult to separate. They are similar in size to *M. drummondi* and are grey in colour, with bright-green under-surface in most cases. All are very active and readily take to flight.

C. pseudotsugæ Van D. (Douglas Fir Buprestid). First record for British Columbia and Canada. Occurs about freshly felled timber. June and July. Frequent. Breeds in Douglas fir, and firs. Lost Lake (taken from pupal cell in Douglas fir, G. A. H.); Sidney (W. H. A. P.). British Columbia, Oregon, and California.

C. carinipennis Lec. (Keeled Buprestid).

Taken about logs of newly cut Douglas fir. July, not common. Sidney (W. H. A. P. and G. A. H.). Recorded as breeding in Douglas fir and a variety of pines by Chamberlin; on V.I. Douglas fir most probably. British Columbia to California.

C. caurina Horn. (North-western Buprestid).

On newly cut Douglas fir. July, August, very scarce. Tod Inlet (A. N.); Highland District (G. A. H.); Sidney (W. H. A. P.). British Columbia to California, and adjoining States.

C. nixa Horn. (Cedar Buprestid). First record for British Columbia and Canada.

Very similar to *M. drummondi*, of unspotted phase. Specimens taken from pupal cell in *Thuja plicata*, Highland District (G. A. H.); Tod Inlet, on trunk of *T. plicata*, June 26th *Thuja plicata*, Highland District, in August (G. A. H.); Tod Inlet, on trunk of *T. plicata*, (W. H. A. P.). Breeds in the cupressine trees (Van Dyke).

C. sylvania Fall. (Woodland Buprestid). First record for British Columbia and Canada.

One of our largest species of this genus. Taken on newly cut Douglas fir. June to August. Rare. Highland District (G. A. H.); Sidney (W. H. A. P.). Breeds in Douglas fir. A Coast species following the Douglas fir from Sonoma County, California, to British Columbia (Van Dyke).

C. femorata Oliv. (Flat-headed Borer). First record for Vancouver Island.

Similar superficially to *C. sylvania*, but smoother and more coppery in colour. On newly felled Douglas fir. June. Sidney (W. H. A. P., G. A. H.); Tod Inlet (A. N.). Widely distributed through the United States and Canada.

Agrilus Steph.

A. politus Say. (Burnished Twig-borer). (Pl. III., Fig. 8.)

A small elongate beetle, bronze or dark steel-blue; found usually on the leaves of *Salix Scouleri* and rarely on flowers of *Rosa nutkana*. May to July. Local. Breeds in willow-stems. Gordon Head (G. A. H.); Shawnigan (E. H. B.); Tod Inlet (A. N.); Sidney (W. H. A. P.); Nanaimo (G. W. T.). Of wide occurrence throughout Canada and the United States. The typical colour of this species elsewhere is more inclined to bronze; the Vancouver Island specimens have the dark-blue form prevailing (W S. Fisher).

CERAMBYCIDÆ OF VANCOUVER ISLAND.

By G. A. Hardy.

This is supplementary to the list in the Mus. Rep., 1925, page 24. As might be expected, with increasing interest in a little-worked district, much new information has accrued during

the past year, and several additional species and varieties have resulted, one or two of which are new to science. In all, twenty new names appear here, including corrections and additions; of these, six are new to science, one species and five varieties.

We are again especially indebted to Dr. E. C. Van Dyke, of Berkeley, Calif., for determinations and much valuable information respecting distribution, etc.; to Messrs. R. and G. R. Hopping, of Vernon, who have freely given much helpful criticism; and to Mr. C. A. Frost, of Framingham, Mass., who has been good enough to furnish information respecting related eastern species. To each and all we have much pleasure in recording our grateful appreciation.

The initials in brackets after species, or information referring to such, are those of the collectors whose names are listed below. Additions to the list are preceded by an asterisk.

A. W. Hanham, G. A. Hardy, A. Nicholls, W. H. A. Preece, G. W. Taylor.

Criocephalus Muls.

C. asperatus Lec. (Rough Ram's-head).

Additional locality, Sidney, August 6th, 1926 (W. H. A. P.).

Eumichthus Lec.

E. œdipus Lec.

This species has turned up locally in considerable numbers at Sidney (W. H. A. P.), where they were frequenting the bloom of *Spiræa discolor* in the month of June. (Pan-Pac. Ent., Vol. III., page 188.)

**E. œdipus* var. *ater* Hardy & Preece.

A melanic form. New variety described in Pan-Pac. Ent., Vol. III., page 188.) Occurring frequently with the species, Sidney (W. H. A. P.).

**E. œdipus* var. *ruber* Hardy & Preece.

A reddish form. New variety, described in Pan-Pac. Ent., Vol. NNN., page 188.) One specimen, Sidney (W. H. A. P.).

Leptalia Lec.

**L. macilenta* (Mann).

Completely black, except a short basal indication of the yellow vittæ which characterized the var. *frankenhauseri* Mann. Mr. Hanham has a short series showing every gradation between the species and variety. On flowers of *Rosa nutkana*, May and June. Victoria (A. W. H.); Gordon Head (G. A. H.); Sidney (W. H. A. P.); Duncan (A. W. H.).

Ortholeptura Lec.

O. valida (Lec.) (Clouded-yellow Leptura).

Additional locality of this rare species, Beaver Lake, July (Jack Preece).

Stenocorus Fab.

S. vestitus Hald.

The red form has occurred as plentifully as the black, with no preponderance of the latter as previously stated.

Evodinus Lec.

E. vancouveri Csy. (Vancouver Longhorn).

Additional localities, Tod Inlet, on flowers of *Smilacina racemosa*, May 2nd, 1926 (A. N.); Sidney, on flowers of *Rosa nutkana*, May 27th, 1926 (W. H. A. P.).

Judolia Muls.

**J. sexmaculata* (L.) (Six-spotted Leptura).

A handsome little species, black with yellow blotches and bands, often in the form of six irregular spots on elytra. June. Tod Inlet (A. N.). On flowers of *Spiræa discolor* (W. H. A. P.). Widely distributed in Northern Europe and America.

Brachyleptura Csy.

**B. sanguinea* (Lec.) (Ruddy Leptura).

More elongate in proportion than *dehiscens*, and dull reddish. June 21st, 1926. Goldstream, on flowers of *Achillea millefolium* (G. A. H.); Victoria (A. W. H.). Across northern part of continent; Alaska to California.

Parallelina Csy.

**P. molybdica* Lec. (Emerald Leptura).

A small metallic green species, frequenting flowers of dogwood (*Cornus stolonifera*), April and May. Duncan (A. W. H.). British Columbia to California.

Strangalepta Csy.

**S.* (*Alosterna*) *rubida* (Lec.). (Flame Leptura).

One specimen in collection of E. H. Blackmore, from Koksilah, near Duncan (C. Livingston). June. Pacific Coast.

Strangalia (Serv.).

**S. propinqua* (Bland) (Dusky Halter).

Very similar to *S. soror*, but with legs and thorax black. July. On flowers of *Spiræa discolor*. Duncan (A. W. H.; G. A. H.).

Leptura (L.).

L. aspera Lec. (Rough Leptura).

The first recent record. One on leaf of *Rubus parviflorus*. Tod Inlet (A. N.).

Desmocerus Serv.

**D. cribipennis* Horn. (Shagreened Gem).

Similar to *piperi*, but elytra in both sexes green. These two species intergrade imperceptibly. Both forms occurred together on one elder-bush at Duncan (A. W. H.). April–June. Forming galls at base of elder (*Sambucus callicarpus*). Tod Inlet (G. A. H.). British Columbia to California.

Anocomis Csy.

A. (*Semanotus*) *lignea* var. *ampla* Csy.

This is the phase occurring on the West Coast, the species having its habitat in the eastern part of the continent. The data in reference to *lignea* in Mus. Rep., 1925, page 31, therefore applies to the form *ampla*.

**A.* (*Semanotus*) *lignea* var. *thujæ* Van Dyke.

Nearly to completely black. A new variety described in Pan-Pac. Ent., Vol. III. page 103. Found along with var. *ampla*, on and in *Thuja plicata*, April and May. Tod Inlet (G. A. H.); Goldstream (G. A. H.); Sidney (W. H. A. P.). Type locality, Tod Inlet (G. A. H.).

A. litigiosa Csy. (*Semanotus nicholas* White).

Additional locality, Sidney, April (W. H. A. P.).

Callidium Fab.

**C. vancouverense* Van Dyke (Western Azure Miner).

A new species, described in Pan-Pac. Ent., Vol. III., page 104. Listed in Mus. Rep., 1925, under *hesperum* Csy. Running about recently cut Douglas fir slash, Sidney, where Mr. Preece took it in series during April and May. Tod Inlet (G. A. H.). Type locality, Sidney (W. H. A. P.).

**C. vile* Lec. (The Insignificant).

A small elongate, black species. April. Gabriola Island, near Nanaimo (G. W. T.). Breeds in *Pinus ponderosa* on the Mainland (Hopping). British Columbia to California.

Phymatodes Muls.

**P. æneus* Lec. (Emerald Sheen). (Pl. IV., Fig. 8.)

Small, elongate, with æneus reflections. On Douglas fir trunks and slash, May and June. Probably breeds in Douglas fir, as has always been found associated with it. Victoria (H. P. Eldridge); Gordon Head (G. A. H.); Sidney (W. H. A. P.); Duncan (A. W. H.). British Columbia to California.

**P. obscurus* Lec. (Brown Oak). (Pl. IV., Fig. 4.)

Similar in size to the preceding, but uniform brown colour. This is the first record north of California (Van Dyke). Breeds in Garry oak (*Quercus Garryana*). June 30th, July, and one, September 25th, 1926. It thus emerges as its associates, *P. decussatus* and *obliquus*, disappear.

PLATE IV.

Family CERAMBYCIDÆ (Longhorn Beetles).

(×½)

Fig.

1. *Phymatodes decussatus* Lec.
2. *Phymatodes decussatus* var. *latifasciatus* Hardy & Preece.
3. *Phymatodes obliquus* Csy.
4. *Phymatodes obscurus* Lec.
5. *Phymatodes dimidiatus* (Kby.).
6. *Phymatodes vulneratus* Lec.
7. *Phymatodes nitidus* Lec.
8. *Phymatodes æneus* Lec.

PLATE IV.

1

2

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8

P. dimidiatus (Kby.) (Pl. IV., Fig. 5.)

Additional locality, Sidney, May (W. H. A. P.).

**P. vulneratus* var. *nigrescens* Hardy & Preece.

Nearly black. A new variety described in Pan-Pac. Ent., Vol. III., page 190, April, 1927. Occurring with the species, Sidney (W. H. A. P.), which is the type locality.

**P. decussatus* var. *latifasciatus* Hardy & Preece. (Pl. IV., Fig. 2).

The two white fasicæ merge, forming a broad white band across elytra. A new variety, described in Pan-Pac. Ent., Vol. III., page 191, April, 1927. Taken with the species at Mount Tolmie and Uplands (G. A. H.). Type locality, Mount Tolmie (G. A. H.).

P. nitidus Lec. (Pl. IV., Fig. 7.)

Additional locality, Sidney, May (W. H. A. P.).

Xylotrechus Lec.

X. obliteratus Lec.

This is the species hitherto labelled in local collections *X. mormonus*. The latter has so far not been recorded from British Columbia (G. R. Hopping). Additional localities: Gordon Head, July (G. A. H.); Sidney (W. H. A. P.).

Clytus Laich.

C. planifrons Lec. (Velvet Beauty).

This has occurred in numbers at Sidney, May and June (W. H. A. P.); also taken Mount Douglas (G. A. H.) and Todd Inlet (A. N.).

Saperda Fab.

S. calcarata Say.

Victoria (J. Noble). The first recent record for Vancouver Island. Infesting a small group of aspen (*Populus tremuloides*), resulting in the death of several trees which were completely riddled by their burrows. Larvæ of all stages of growth, suggesting a two- or three-year cycle, were obtained, mining in the living heart-wood. Adults just emerging, July 6th, 1927.

**S. populnea* L. (Speckled Saperda).

Elongate, subcylindrical; black with sparse white pubescence arranged in spots. One specimen, Duncan (A. W. H. and G. A. H.), July 4th, 1926, taken on *Populus trichocarpus*, in which it breeds, forming galls on the twigs and branches. Occurs in Europe and British Columbia to California.

Oberea Muls.

O. quadricallosa Lec.

Additional localities: Gordon Head, June (G. A. H.); Todd Inlet, July (A. N.).

Literature pertaining to the Cerambycidæ of Vancouver Island published since the last report:—

"Notes on Some Species of Cerambycidæ (Col.) from the Southern Portion of Vancouver Island." G. A. Hardy and W. H. A. Preece. Pan-Pac. Ent., Vol. III., page 34.

"New Species and Subspecies of West American Cerambycidæ." E. C. Van Dyke. Pan-Pac. Ent., Vol. III., page 99.

"Further Notes on Some Species of Cerambycidæ from the Southern Portion of Vancouver Island, B.C., with Descriptions of Some New Varieties." G. A. Hardy and W. H. A. Preece. Pan-Pac. Ent., Vol. III., page 187.

AMPHIBIA OF BRITISH COLUMBIA.

Additional Notes and Corrections.

By G. A. Hardy.

The following notes and additions are supplementary to the article under this heading in the Report for 1925, page 21.

We are gratefully indebted to Mr. J. R. Slevin, of the Academy of Sciences, San Francisco, for the determination and verification of all material of any value, and to whom we have much pleasure in extending our warmest appreciation and thanks.

Ambystoma macrodactylum Baird (Long-toed Salamander).

Eight specimens of this salamander were received from Creston, B.C., collected by the Alice Siding School under the direction of Mr. C. S. Lallemand.

Ensatina eschscholtzii Gray (Oregon Salamander).

The specimens referred to from Agassiz under this name in the Report for 1925 are *Ambystoma macrodactylum.*

Bufo boreas boreas Baird & Girard (Northwestern Toad).

This was frequently met with in Garibaldi Park, B.C., at an elevation of 5,600 feet. As compared with specimens taken at Daisy Lake (1,200 feet) during the same month, they were noticeably much lighter and brighter in coloration.

Rana pretiosa pretiosa Baird & Girard (Western Spotted Frog).

Several were seen and taken at Daisy Lake, B.C., near the head of Howe Sound, July, 1926, by G. A. Hardy. The following colour notes were made from a fresh specimen:—

Upper-side: Yellowish-brown very sparsely spotted with black—one small round spot on head and two U-shaped ones on back.

Under-side: Yellowish-white, shading into dull and obscure pink on the under-side of legs.

That they are distinctly sluggish was well shown by the comparative ease of capture. One was disturbed and dived to the bottom, where it crouched until taken up by the hand, making no marked attempted to escape.

Rana aurora aurora Baird & Girard (Oregon Red-legged Frog).

A specimen from Renfrew, Vancouver Island, was presented to the Museum by Mr. J. G. French.

ACCESSIONS.

The following additions have been received during the past year and cordial thanks are extended to the donors:—

Anthropology.

Skull, found at Turner Point, near Tod Inlet (A. R. Cross).
Collection of Indian spear-points (7) from Elizabeth and John Doole, Kuleets Reserve, V.I.
Scalper. Kuleets Reserve, V.I. (August Planchie).
Paint-dish, origin unknown (A. M. Johnson, K.C., Victoria).
Adze. Jordan River, V.I. (Dr. Felton).
Spear-point, Shoal Harbour, V.I. (W. H. A. Preece).
Arrow-head and scraper. Slocan, B.C. (W. J. Sheppard).
Bow and arrow. Neah Bay, B.C. (Ex-Lieutenant-Governor W. C. Nichol).
Arrow-head. Beacon Hill Park (Captain Pike, R.N.).
Stone maul. Skidegate, B.C., 1909 (Major Harold Nation).
Cast of face on totem-pole. Victoria Memorial Museum, per Harlan I. Smith.
Bone needle-point. Willows Beach, V.I., on shell-mound (G. A. Hardy).
Abalone pendant and core. Willows Beach, V.I. (T. Butcher).
Sinker. Qualicum Beach, V.I. (Colonel Noel Money).
Charm. Victoria (A. M. Johnson, K.C.).
Skull. Somenos Lake, V.I. (A. Colliard).
Pair of snowshoes (Mrs. A. W. Bridgman).
Pair of snowshoes (Mrs. H. K. Andrews).

Mammalogy.

Mule-deer antlers found in clay, 8 feet from the surface. Alexis Creek (H. P. S. Bayliff).
Vertebræ of Whale, found on the beach in James Bay, Victoria (Charles Bright).
For other Mammals *see* Garibaldi Report, page 26.

Ornithology.

Western Robin (*Planesticus migratorius propinquus* Ridgway). Sidney, V.I. (W. H. A. Preece).

Rufous Hummingbird (*Selasphorus rufus* Gmelin). Victoria (Mrs. Birney).

Lewis' Woodpecker (*Asyndesmus lewisi* Riley). Departure Bay, V.I. (Eric Keighley).

Band-tailed Pigeon (*Columba fasciata fasciata* Say.). Gordon Head, V.I. (F. Kermode).

Dusky Horned Owl (*Bufo virginianus saturatus* Ridgway). Metchosin, V.I. (per Dr. K. White).

PLATE V.

WORK OF RED-BREASTED SAPSUCKER.

Sphyrapicus ruber (Gmel.).

On Alder—

A. 1st day's work, 4.50 p.m. to 6.30 p.m.

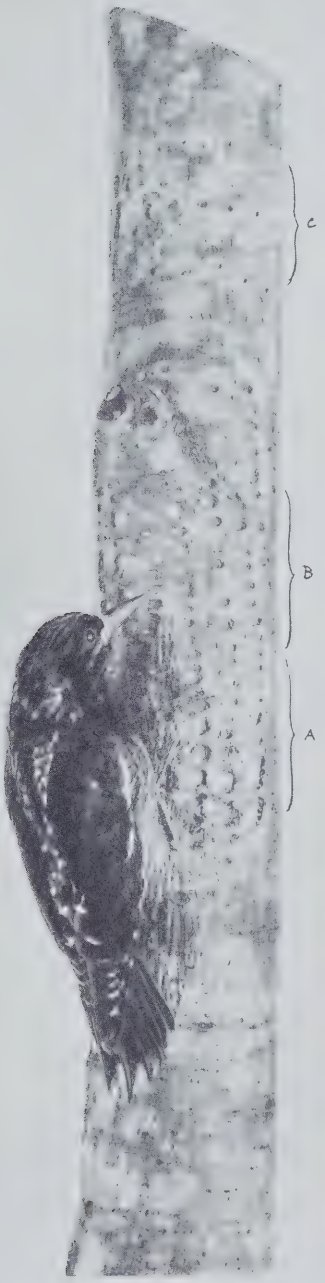
B. 2nd day's work, 6 a.m. to 6.30 p.m.

C. 3rd day's work, 6 a.m. to 6.30 p.m.

The larger holes within the limits of each day's work are the feeding-troughs for the day.

The above notes and observations, together with the specimen of wood illustrated, were contributed by Mr. G. D. Sprot, Cobble Hill, V.I., September 18th, 1926.

PLATE V.



The following collection of birds was received from W. B. Johnstone, Edgewood, B.C. These were all taken at Edgewood, and are listed with the dates upon which the birds were obtained.

Pipit (*Anthus rubescens* Tunstall). May 8th, 1920. Two specimens.
Nevada Savannah Sparrow (*Passerculus s. nevadensis* Grinn.). May 2nd, 1920.
Nevada Savannah Sparrow (*Passerculus s. nevadensis* Grinn.). July 16th, 1919.
Fox-sparrow (*Passerella iliaca altivagans* Riley). July 5th, 1919.
Merrill's Song-sparrow (*Melospiza m. merrilli* Brewster). Three specimens. November 13th, 1919; June 8th, 1922; June 11th, 1922.
Sooty Song-sparrow (*Melospiza melodia rufina* Bonaparte). September 9th, 1918.
White-winged Crossbill (*Loxia leucoptera* Gmelin). July 5th, 1919.
Shufeldt's Junco (*Junco hyemalis connectens* Cous.). September 14th, 1919.
Willow-thrush (*Hylocichla fuscescens salicicola* Ridgway). September 9th, 1919.
Olive-backed Thrush (*Hylocichla ustulata swainsoni* Tschudi). May 18th, 1920.
Sanderling (*Calidris leucophæa* Pallas). September 14th, 1919.
Black Swift (*Cypseloides niger borealis* Kennerly). September 15th, 1920.
Northwestern Red-wing (*Agelaius phœniceus caurinus* Ridgway). February 25th, 1921.
Rusty Blackbird (*Euphagus carolinus* Muller). November 10th, 1917.
Brewer's Blackbird (*Euphagus cyanocephalus* Wagler). April 24th, 1920.
Lapland Longspur (*Calcarius lapponicus lapponicus* (Linnæus). September 9th, 1921.
Calaveras Warbler (*Vermivora rubricapilla gutturalis* Ridgway). May 13th, 1920.

Reptilia.

Garter-snake (*Thamnophis o. ordinoides* B. & G.). Two specimens. Gordon Head (Mrs. F. Kermode).

Alligator Lizard (*Gerrhonotus principis* B. & G.). One specimen from Victoria (H. L. S. Blake); five specimens from Creston (Alice Siding School).

Rubber Boa (*Charina bottæ* Blainville). Creston (Alice Siding School).

Amphibia.

Long-toed Salamander (*Ambystoma macrodactylum* Baird). Eight specimens. Creston (Alice Siding School).

Rusty Salamander (*Aneides ferreus* Cope). Sidney (Eric Graham, per W. H. A. Preece).

Western Toad (*Bufo b. boreas* B. & G.). Four specimens, Creston (Alice Siding School); three specimens, Garibaldi (G. A. Hardy).

Western Spotted Frog (*Rana p. pretiosa* B. & G.). Daisy Lake (G. A. Hardy).

Oregon Red-legged Frog (*Rana a. aurora* B. & G.). Port Renfrew (G. French).

Ichthyology.

Trout. Lost Lake, Highland District (E. A. Cooke).

Sand-launce (*Ammododytes personatus* Girard). Cordova Bay (Rev. R. Connell and G. A. Hardy).

Lepidoptera.

Several species of Moths. Victoria (E. A. Cooke).
Smerinthus cersyi Kirby. Victoria (E. Moyes).
Telea polyphemus Cram. Esquimalt (Captain O. R. Parker).
Telea polyphemus Cram. Kamloops (J. W. Hall).
For further Lepidoptera *see* Report on Mount Garibaldi Park, page 19.

Coleoptera.

Large-banded borer (*Rosalia funebris* Mots.). A living specimen taken on the beach at the Willows, Victoria, June 24th (Miss Askey).

California Prionus (*Prionus californicus* Mots.). Victoria, July 19th (K. Rots) and July 21st (T. Wood).

Phynatinus pardalinus Wick. A weevil affecting lily-bulbs. Duncan, October 23rd (W. Downes).

Helops pernitens Lec. Victoria, December 22nd (E. A. Cooke).

Collections representing various families were received as follows, by gift unless otherwise stated:—

J. W. Cockle, Kaslo, approximately 900 specimens (purchase).

G. Stace Smith, Creston, approximately 250 specimens.

W. H. A. Preece, Sidney, approximately 300 specimens.

G. A. Hardy, Garibaldi, approximately 300 specimens (collected for the Museum).

Alice Siding School, Creston, per C. S. Lallemande, approximately 200 specimens.

R. Hopping, Vernon, 32 specimens of 8 named species.

W. J. Chamberlin, Corvallis, Oregon, 4 specimens.

Of special interest are the following paratypes belonging to the family Cerambycidæ (Longhorns). These are described in the Pan-Pac. Ent., 1927, Vol. III.

Callidium vancouverense Van Dyke. Sidney, V.I. (W. H. A. Preece).

Phymatodes vulneratus var. *nigrescens* Hardy & Preece. Sidney, V.I. (W. H. A. Preece).

Eumichthus œdipus var. *ater* Hardy & Preece. Sidney, V.I. (W. H. A. Preece).

Phymatodes decussatus var. *latifasciatus* Hardy & Preece. Mount Tolmie, V.I. (G. A. Hardy).

Semanotus lignens var. *thujæ* Van Dyke. Tod Inlet (G. A. Hardy).

In addition to the specimens noted above, Mr. G. Stace Smith sent in the following notes, accompanied by specimens, relative to the biology of the species and which are of sufficient interest to record:—

Trachykele nimbosa Fall (Buprestidæ). Living specimens taken from pupal cells in *Abies grandis* in November, 1926. Originally infected through an old axe-scar.

Callidium subopacum Swaine. (Cerambycidæ). From pupal cell in Douglas fir (*Pseudotsuga mucronata*), November, 1926.

Pogonocherus oregonus (Lec.) (Cerambycidæ). Living specimens from pupal cell in *Abies grandis*, November, 1926. The larvæ mine in the sapwood, dipping into the heart-wood prior to pupation, and then gnaw to within the outer bark. The adults remain quiescent until the following spring, finally gnawing their way out.

The specimens of the last were accompanied by larvæ, pupæ, and sections of the wood illustrating their work; these have now been added to the exhibit series of life-histories.

For other Coleoptera *see* Report of Mount Garibaldi Park, page 22.

Hymenoptera.

Six species of named "bumblebees" showing queen and workers, Vernon (Max E. Rhuman).

Sixty-five specimens, Sidney (W. H. A. Preece).

Miscellaneous.

A number of large Spiders of several species were also received from the following: Dr. S. K. White, Messrs. A. R. Sherwood, N. H. Dickinson, Dr. J. E. H. Kelso, Miss M. George, and Mr. A. W. Esnouf.

PUBLICATIONS RECEIVED FROM OTHER INSTITUTIONS.

(Alphabetically arranged.)

Acadian Entomological Society, Nova Scotia	2
American Museum of Natural History, New York	5
Bernice Pauhai Bishop Museum, Honolulu, Hawaii	1
Boston Society of Natural History, Boston, Mass.	4
Bristol Museum and Art Gallery, Bristol, England	1
British Columbia Historical Association	1
British Museum, London, England	5
California Academy of Sciences, San Francisco, Calif.	36
Carnegie Institute, Pittsburgh, Pa.	1
Charleston Museum, Charleston, S.C.	1
Children's Museum, Boston, Mass.	1
Cincinnati Museum Association, Cincinnati, Ohio	1
City Art Museum, St. Louis, Mo.	4
Carried forward	63

PUBLICATIONS RECEIVED FROM OTHER INSTITUTIONS—*Continued.*

Brought forward	63
Cleveland Museum of Natural History	6
Colorado Museum of Natural History, Denver, Colo.	1
Cornell University, Ithaca, N.Y.	1
Dominion Government Publications, Ottawa	34
Field Museum, Chicago, Ill.	3
Grand Rapids Public Library, Mich.	1
Hudson's Bay Company, Winnipeg, Man.	1
Illinois State Natural History Survey, Urbana, Ill.	8
Instituto General Y Recnico de Valencia, Spain	1
Insular Experiment Station, Rio Piedras, P.R.	4
John Crerar Library, Chicago, Ill.	1
Library of Congress, Washington, D.C.	1
Lloyd Library, Cincinnati, Ohio	3
Manchester Museum, Manchester, England	5
Museum of Fine Arts, Boston, Mass.	7
Natural History Society of Manitoba, Winnipeg, Man.	2
Nebraska State Museum, Lincoln, Neb.	2
New York Botanical Garden, N.Y.	1
New York Zoological Society, N.Y.	8
Ohio Agricultural Experiment Station, Wooster, Ohio	7
Peabody Museum, Yale University, New Haven, Conn.	6
Pennsylvania Museum and University	12
Philadelphia Academy of Natural Sciences	1
Province of British Columbia	6
Public Museum, Milwaukee, Wis.	2
Puget Sound Biological Station, Seattle, Wash.	1
Royal Canadian Institute, Toronto, Ont.	1
San Diego Natural History Museum	1
San Diego Society of Natural History	1
Smithsonian Institution, Washington, D.C.	62
State College of Washington, Pullman, Wash.	1
Staten Island Institute of Arts & Sciences	4
St. Louis Public Library, Mo.	1
United States Department of Agriculture, Washington, D.C.	7
University of California, Berkeley, Calif.	43
University of Illinois, Urbana, Ill.	1
University of Michigan, Ann Arbor	1
University of Montreal, Montreal, P.Q.	3
University of Oklahoma, Neb.	1
University of Toronto, Ont.	1
University of Washington, Seattle, Wn.	5
Vancouver City Museum, B.C.	12
Total	333

We have pleasure in recording our thanks for receipt of the "Northern Cordilleran," published in 1913, from Mrs. L. A. Green, in acceding to a request made known for that purpose by the B.C. Mountaineering Club, per Mr. Neal M. Carter.

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1927.

FIFTH ANNUAL REPORT

OF

THE FIRE MARSHAL

FOR THE

PROVINCE OF BRITISH COLUMBIA

STATISTICS, 1926

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
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1927.

To His Honour ROBERT RANDOLPH BRUCE,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Fifth Annual Report of the Fire Marshal for the year ended December 31st, 1926.

A. M. MANSON,

Attorney-General.

Victoria, B.C., March 31st, 1927.

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REPORT OF FIRE MARSHAL.

OFFICE OF FIRE MARSHAL,
VANCOUVER, B.C., March 31st, 1927.

Honourable A. M. Manson, K.C.,
Attorney-General, Victoria, B.C.

SIR,—I have the honour to submit my Fifth Annual Report as Fire Marshal, together with statistics showing the fire loss in the Province for the year ended December 31st, 1926.

The total for the year covering buildings and contents amounted to $3,638,427, being $538,414 less than 1925 and the lowest for the period covering the four years from 1923 to 1926. These figures include twenty logging camps and their equipment, but do not include forest fires and timber.

As in previous years, our heavy losses were in industrial plants and warehouses, due of course to the large values involved, and, further, to insufficient fire-protection equipment. The list of preventable fires is still too large, and it is evident that a more extensive campaign must be conducted to awaken the public to the seriousness of this unnecessary destruction of property. While we are gratified to note that there has been some reduction this year, yet there is still much to be done. When the public conscience is properly awakened the person in whose premises a fire occurs will be placed in the same category as the one who drives to the public danger, and the onus will be upon him to prove that he has used reasonable care to prevent fire.

A comparison of the statistics for 1925 and 1926 shows that the decreased losses for this year were fairly well spread over the entire Province. We are compelled to note, however, that there has been a decided increase in fourteen cities and eleven district municipalities. This is not a credit to the persons responsible for the fire-prevention work in these districts. It will also be noted that in seven cities and fifteen district and village municipalities they have failed to carry out the provisions of section 19 of the Act and provide for the regular inspection of buildings and premises.

You will be pleased to note, however, that some have been diligent in the work of fire-prevention during the year. Assistant Fire Marshals have made 52,134 inspections and issued 5,003 orders to remove hazards. Forty-five appeals from these orders were received and passed upon by this office. There were no appeals from my decisions to the Courts during the year. Twenty-nine convictions were obtained for failure to carry out orders. All fires were investigated and reports are on file in this office. Twelve inquiries were held under section 12 of the Act and three cases of arson discovered and prosecuted, a conviction being obtained in each case.

The demand for advice and assistance in the matter of fire-protection in public buildings, such as schools, hospitals, hotels, assembly-halls, and mercantile buildings, has grown greatly during the year and has been met as far as possible. There is an insistent demand and a great need has developed for Provincial regulations governing the methods of fire-prevention in these classes of buildings, particularly in municipalities and unorganized districts where there are no building by-laws in force.

Along the line of educational work we have co-operated with the insurance organizations in bringing the fire-prevention message to the pupils in the public schools throughout the Province. Gold medals and money prizes were offered for the best essays on the subject. Great interest was manifested by both teachers and scholars and the results were excellent. In addition to this, it has been my privilege, as opportunity offered, to address a number of schools throughout the Province. In the matter of educational propaganda, with your approval space was acquired in the daily papers and during Fire-prevention Week display advertisements were inserted calling attention to the enormous cost of our fires and the best methods of reducing them. It has been estimated that 80 per cent. of the population of the Province was reached by this method. A number of letters have been received testifying to the excellent results of this publicity.

Public buildings throughout the Province have been inspected during the year by members of the office staff and myself and such recommendations made for their protection from fire as

were found advisable and necessary. Advice and assistance has been given in the matter of fire-protection equipment for cities and municipalities. The City of North Vancouver and the Municipality of Point Grey have passed excellent fire-prevention by-laws. In a number of cities new fire-protection equipment has been purchased and put into commission.

There has been a very considerable advance in the installation of the new type "down-draught" refuse-burners in connection with our sawmills. In almost every case these burners have given complete satisfaction and undoubtedly have reduced the fire hazard in the mills using them.

With your approval, a hydro-thermograph was purchased and installed at the Provincial Court-house in charge of the Forest Branch of the Vancouver District. During the dry season frequent readings were taken each day. When the humidity was found to be nearing the danger-point sawmills and other hazardous industries were notified to take extra precautions and reduce fires. The co-operation of the mill-owners was excellent, with the result that in the district covered by this service the number of fires from sparks and other causes due to excessive heat and low humidity were greatly reduced.

Moving-picture Theatres Act.—In May, 1926, the regulations passed by Order in Council under the above Act were placed in my hands to administer. During the year 431 inspections on moving-picture theatres and film exchanges have been made and 137 orders to take care of unsafe conditions were issued and enforced. Ninety-seven kinematograph-machines were approved and stamped during the year. Two portable projection-rooms were inspected and approved. Plans and specifications for the construction of ten new theatres and for the remodelling of seven old ones were received, checked, and approved. On June 1st a film-report system was inaugurated, whereby we are able to keep a check on every film exhibited in the Province and to know its physical condition when leaving each theatre. As a result of this system of checking 22,000 feet of hazardous film was removed from circulation. In addition to this, the film exchanges voluntarily removed from circulation 36,000 feet of film, making a total of 58,000 feet of film which has been removed from circulation and destroyed during the year. Film fires in theatres during the year consumed 3,000 feet of film. Smokers' carelessness was responsible for two fires, while two fires with a loss of $10,837 were of unknown origin, one of which originated in a furnace-room.

Pursuant to regulations passed under the "Fire Marshal Act," the revisers employed in the exchanges operating in the Province have been examined as to their fitness for the work which they are called upon to do. In addition to this, Mr. Oswald has been assisted in the examination of seventeen projectionists during the year.

Thanks are due to the members of my staff for their efficient assistance in compiling the statistics in connection with this report and carrying out their duties under the Act; also to the Municipal and Provincial Police for their assistance in investigating fires and carrying out the dutes of Assistant Fire Marshals in unorganized districts and for valuable assistance rendered in the conviction of the offenders in the arson cases mentioned.

I have the honour to be,
Sir,
Your obedient servant,

J. ALFRED THOMAS,
Fire Marshal.

TABLE I.—INSPECTIONS MADE AND ORDERS ISSUED BY ASSISTANT FIRE MARSHALS.

Name.	Inspections.	Orders.
City Municipalities (33).		
Alberni	.....	.....
Armstrong	37	4
Chilliwack	22	10
Courtenay	1	.....
Cranbrook	300	104
Cumberland	41	11
Duncan	149	29
Enderby	35	.....
Fernie	659	42
Grand Forks	5	3
Greenwood	.....	.....
Kamloops	508	6
Kaslo	.....	.....
Kelowna	.....	.....
Ladysmith	70	14
Merritt	45	17
Nanaimo	696	10
Nelson	1,141	78
New Westminster	1,187	124
North Vancouver	1,746	160
Port Alberni	24	19
Port Coquitlam	.....	.....
Port Moody	55	6
Prince George	312	104
Prince Rupert	355	150
Revelstoke	327	5
Rossland	309	124
Salmon Arm	.....	.....
Slocan	.....	.....
Trail	1,353	6
Vancouver	29,375	3,311
Vernon	245	2
Victoria	6,922	179
Totals	45,919	4,518
District Municipalities (29).		
Burnaby	120	33
Chilliwack	43	.....
Coldstream	.....	.....
Coquitlam	.....	.....
Delta	.....	.....
Esquimalt	51	32
Fraser Mills	28	.....
Kent	.....	.....
Langley	.....	.....
Maple Ridge	.....	.....
Matsqui	8	.....
Mission	54	.....
North Cowichan	290	116
North Vancouver	.....	.....
Oak Bay	120	6
Peachland	.....	.....
Penticton	47	9
Pitt Meadows	.....	.....
Point Grey	2,254	25
Richmond	37	22
Saanich	10	8
Salmon Arm	.....	.....
South Vancouver	1,865	59
Spallumcheen	.....	.....
Sumas	.....	.....

TABLE I.—INSPECTIONS MADE AND ORDERS ISSUED BY ASSISTANT FIRE MARSHALS—*Continued.*

Name.	Inspections.	Orders.
District Municipalities—Continued.		
Summerland	25	7
Surrey	1	.....
Tadanac	262	11
West Vancouver	60	16
Totals	5,275	344
Village Municipalities (6).		
Abbotsford	.....	.....
Burns Lake	17	8
Creston	11	3
Mission	201	32
Smithers	.....	.....
Vanderhoof	.....	.....
Totals	229	43
Fire Districts (24).		
Anyox	1	1
Burns Lake	3	1
Dawson Creek	.....	.....
Golden	9	9
Hazelton	.....	.....
Hedley	.....	.....
Ioco	14	.....
Kimberley	147	47
Lucerne	.....	.....
Moyie	.....	.....
Nakusp	.....	.....
Oliver	38	2
Pacific Mills, Limited	.....	.....
Port Essington	12	8
Pouce Coupe	.....	.....
Powell River	420	.....
Princeton	33	20
Quesnel	11	.....
Rolla	.....	.....
Sandon	.....	.....
Stewart	9	10
Telkwa	6	.....
Terrace	.....	.....
Union Bay	8	.....
Totals	711	98
Grand totals	52,134	5,003
Grand totals, 1925	49,889	4,759
Grand totals, 1924	49,677	5,304
Grand totals, 1923	40,573	5,468

TABLE II.—FIRES REPORTED.

Districts reporting.	Number.	Amount of Loss.
City Municipalities (33).		
Alberni	2	$ 255
Armstrong	1	500
Chilliwack	3	12,334
Courtenay	19	47,005
Cranbrook	17	3,559
Cumberland	1	258
Duncan	5	6,927
Enderby	1	1,000
Fernie	15	8,071
Grand Forks	7	3,726
Greenwood	2	3,934
Kamloops	7	7,235
Kaslo	1	250
Kelowna	13	1,092
Ladysmith	7	2,894
Merritt	5	1,560
Nanaimo	38	18,919
Nelson	16	6,551
New Westminster	44	52,545
North Vancouver	30	13,804
Port Alberni	8	8,548
Port Coquitlam	5	8,068
Port Moody	11	21,063
Prince George	2	2,639
Prince Rupert	15	161,175
Revelstoke	21	24,820
Rossland	13	6,240
Salmon Arm	2	775
Slocan	.....	.....
Trail	14	2,746
Vancouver	549	864,061
Vernon	5	4,216
Victoria	99	32,656
Totals	978	$1,329,426
District Municipalities (29).		
Burnaby	64	$ 80,706
Chilliwack	20	62,875
Coldstream	.....	.....
Coquitlam	12	21,092
Delta	3	5,894
Esquimalt	4	998
Fraser Mills	.....	.....
Kent	2	1,932
Langley	18	59,533
Maple Ridge	19	38,960
Matsqui	13	4,513
Mission	5	8,604
North Cowichan	5	11,489
North Vancouver	7	16,755
Oak Bay	13	2,262
Peachland	2	4,400
Penticton	17	20,268
Pitt Meadows	4	7,246
Point Grey	112	18,154
Richmond	8	31,410
Saanich	26	10,684
Salmon Arm	4	4,220
South Vancouver	85	211,646
Spallumcheen	3	10,300
Sumas	8	13,001
Summerland	7	32,753

TABLE II.—FIRES REPORTED—*Continued.*

Districts reporting.	Number.	Amount of Loss.
District Municipalities—Continued.		
Surrey	15	$ 72,796
Tadanac	4	1,520
West Vancouver	7	4,170
Totals	487	$ 758,181
Village Municipalities (6).		
Abbotsford	2	$ 2,198
Burns Lake	4	36,098
Creston	.....	.....
Mission	8	12,421
Smithers	4	639
Vanderhoof	.....	.....
Totals	18	$ 51,356
Fire Districts (24).		
Anyox	3	$ 21,304
Burns Lake	.....	.....
Dawson Creek	.....	.....
Golden	.....	.....
Hazelton	1	25
Hedley	.....	.....
Ioco	2	18,106
Kimberley	4	1,289
Lucerne	.....	.....
Moyie	.....	.....
Nakusp	.....	.....
Oliver	.....	.....
Pacific Mills, Limited	1	30
Port Essington	1	124
Pouce Coupe	.....	.....
Powell River	1	4,570
Princeton	2	3,004
Quesnel	.....	.....
Rolla	.....	.....
Sandon	.....	.....
Stewart	4	5,926
Telkwa	.....	.....
Terrace	2	39
Union Bay	7	10,489
Totals	28	$ 64,936
Unorganized Districts (15).		
Boundary	16	$ 40,315
Fort George	10	97,228
Fort St. John	2	4,000
Hazelton	4	9,063
Kamloops	23	51,771
Kootenay, North-east	13	121,497
Kootenay, South-east	37	170,178
Kootenay, West	28	138,405
Lillooet	9	15,783
Nanaimo	81	217,605
Prince Rupert	6	42,158
Vancouver-New Westminster	36	307,152
Vernon	25	46,793
Victoria	27	138,214
Yale	6	34,366
Totals	323	$1,434,528
Grand totals	1,834	$3,638,427

NOTE.—Construction of buildings—

Fire-resisting	1, loss $	73
Brick or concrete	251, „	703,732
Frame	1,582, „	2,934,622
	1,834, „	$3,638,427

TABLE III.—CAUSES OF FIRES.

Causes of Fires.	Number.	Amount of Loss.
Ammonia-fumes burning tires	1	$ 202
Ashes against wood	16	9,865
Boiler insufficiently protected	1	10,426
Candle carelessness	17	1,424
Canned heat left burning	1	15
Carburettor back-firing	27	14,928
Clothes too near stove or stove-pipe	30	6,516
Coal-gas explosion	3	5,233
Coal-oil carelessness	9	12,649
Coal-oil, children with	1	2,200
Collision	5	2,350
Curtains from candle	1	8
Curtains from lamp	1	10
Curtains from stove	1	77
Defective battery connection	1	10
Defective blower	1	68
Defective brooder	4	2,343
Defective chimney	97	171,512
Defective film	2	367
Defective fireplace	31	14,122
Defective furnace or furnace-pipe	9	5,923
Defective heater	1	800
Defective lamp	3	280
Defective matches	7	321
Defective muffler	2	633
Defective oil-stove	1	110
Defective oven	1	275
Defective stove or stove-pipe	25	31,237
Defective wiring	15	10,444
Dust explosion	1	16,000
Electrical appliances	53	19,537
Engine back-firing	1	304
Exposure	204	777,924
Fire-crackers	1	7
Friction in pulley	1	117
Fumigation	1	50
Furnace or furnace-pipe insufficiently protected	11	8,329
Gasolene carelessness	25	21,844
Gasolene, children with	2	303
Gasolene explosion	4	24,250
Gasolene leaking on exhaust-pipe	2	2,475
Gasolene-torch explosion	2	165
Gas-plate insufficiently protected	4	779
Grease on stove	23	15,056
Gunpowder, child with	1	30
High-tension wires falling on building	1	450
Hollow-shaft explosion	1	66
Hot box	3	8,833
Hot chain put in barrel of tar caused explosion	1	4,064
Hot gravel against wood	1	367
Hot poker left against woodwork	1	60
Hot soldering-iron laid on tray	1	3
Ignition of escaping gas by pilot-light	1	75
Incendiary	23	55,203
Lamp explosion	7	26,738
Lamp upset	9	12,120
Lantern explosion	1	5,500
Lantern hung too near rafters	1	7
Lantern upset	1	5,500
Lightning	5	3,396
Lime ignited by water	1	250
Live coals	6	106
Match carelessness	42	17,528
Matches, children with	32	10,332
Matches, mice with	4	1,526

TABLE III.—CAUSES OF FIRES—*Continued.*

Causes of Fires.	Number.	Amount of Loss.
Mattress too near stove	3	$ 80
Oil overflowing from furnace	1	226
Oil-stove upset	2	6,071
Overheating of dry-kiln	3	35,350
Overheating of lime-kiln	1	2,897
Paper from fireplace	1	10
Phosphorus	1	32
Pressure-tank explosion	1	600
Rubbish around furnace	2	2,870
Short circuit	67	112,550
Smokers' carelessness	231	150,648
Sparks from boiler	3	1,062
Sparks from burning rubbish	7	2,486
Sparks from bush fire	18	88,091
Sparks from chimney	195	125,711
Sparks from copper mould	1	20
Sparks from cupola	1	2,460
Sparks from cutting-machine	1	3,000
Sparks from Dutch oven	1	1,494
Sparks from engine	8	27,450
Sparks from fireplace	57	5,268
Sparks from furnace or furnace-pipe	6	30,357
Sparks from locomotive	6	24,520
Sparks from mill burner	17	288,136
Sparks from oven fire	1	568
Sparks from slash fire	1	2,975
Sparks from smoke-stack	6	1,370
Sparks from steam-shovel	1	1,424
Sparks from stove or stove-pipe	19	12,184
Spontaneous combustion	36	139,063
Stove explosion	2	1,501
Stove or stove-pipe insufficiently protected	92	115,929
Sun's rays	2	49,608
Tar boiling over	5	6,912
Thawing pipes	6	885
Torch explosion	1	95
Unknown	222	1,041,588
Varnish boiling over on stove	1	185
Wood too near furnace	3	934
Wood too near stove	10	8,175
Totals	1,834	$3,638,427

TABLE IV.—CLASSIFICATION OF PROPERTY BURNED AND CAUSES.

Property.		Causes.		Amount of Loss.	
Apartments	38	Ashes against wood	1	$ 90	
		Coal-oil carelessness	1	8	
		Defective chimney	2	110	
		Defective furnace	1	300	
		Defective wiring	1	13	
		Electrical appliances	1	24	
		Exposure	1	90	
		Gasolene carelessness	1	50	
		Hot soldering-iron laid on tray	1	3	
		Lamp upset	2	9	
		Match carelessness	1	25	
		Matches, children with	1	119	
		Short circuit	2	332	
		Smokers' carelessness	16	520	
		Sparks from chimney	1	100	
		Sparks from fireplace	1	22	
		Spontaneous combustion	1	1,822	
		Torch explosion	1	93	
		Unknown	2	427	
					$ 4,159
Automobiles	144	Ammonia-fumes burning tires	1	$ 202	
		Carburettor back-firing	23	3,910	
		Collision	5	2,350	
		Defective battery connection	1	10	
		Defective muffler	2	633	
		Defective wiring	2	675	
		Exposure	17	12,752	
		Gasolene carelessness	4	1,315	
		Gasolene leaking on exhaust-pipe	2	2,475	
		Match carelessness	5	5,091	
		Matches, children with	1	100	
		Pressure-tank explosion	1	600	
		Short circuit	47	12,883	
		Smokers' carelessness	11	1,368	
		Unknown	22	11,832	
					56,196
Bakeries	6	Ashes against wood	1	$ 20	
		Defective oven	1	275	
		Grease on stove	1	239	
		Sparks from oven fire	1	568	
		Stove-pipe insufficiently protected	1	324	
		Unknown	1	1,000	
					2,426
Banks	1	Exposure	1	----------	633
Barber-shops	2	Ashes against wood	1	$ 7	
		Sparks from stove	1	125	
					132
Barns	44	Exposure	1	$ 800	
		Incendiary	1	500	
		Lantern explosion	1	5,500	
		Lantern upset	1	5,500	
		Lightning	1	3,000	
		Match carelessness	2	3,800	
		Matches, children with	3	1,673	
		Smokers' carelessness	10	25,615	
		Sparks from burning rubbish	1	321	
		Sparks from cutting-machine	1	3,000	
		Sparks from locomotive	1	1,437	
		Sparks from mill burner	1	50	
		Spontaneous combustion	7	14,748	
		Unknown	13	25,562	
					91,506
Barns and stables	3	Incendiary	1	$ 3,000	
		Spontaneous combustion	1	2,071	
		Unknown	1	228	
					5,299

TABLE IV.—CLASSIFICATION OF PROPERTY BURNED AND CAUSES—*Continued.*

Property.		Causes.		Amount of Loss.	
Barracks	1	Sparks from chimney	1	$	20
Blacksmith-shops	4	Gasolene explosion	1	$ 500	
		Oil-stove upset	1	6,000	
		Sparks from bush fire	1	1,200	
		Sparks from chimney	1	2,000	
					9,700
Boarding-houses	6	Smokers' carelessness	2	$ 16	
		Sparks from fireplace	1	7	
		Stove insufficiently protected	1	635	
		Unknown	2	1,425	
					2,083
Boat-houses	1	Gasolene carelessness	1		4,570
Bowling-alleys	1	Sparks from burning rubbish	1		75
Bunk-houses	7	Incendiary	1	$ 934	
		Match carelessness	1	46	
		Sparks from engine	1	452	
		Sparks from mill burner	1	150	
		Stove insufficiently protected	1	500	
		Unknown	2	3,700	
					5,782
Canneries	2	Hot chain put in barrel of tar caused explosion	1	$ 4,064	
		Sparks from chimney	1	124	
					4,188
Chicken-houses	8	Ashes against wood	1	$ 150	
		Defective brooder	2	262	
		Defective lamp	1	75	
		Fumigation	1	50	
		Smokers' carelessness	1	505	
		Unknown	2	704	
					1,746
Churches	5	Electrical appliances	1	$ 10	
		Furnace-pipe insufficiently protected	1	415	
		Unknown	3	468	
					893
Churches and dwellings	1	Defective fireplace	1		11,290
Clubs	6	Exposure	2	$ 109	
		Smokers' carelessness	2	7,692	
		Sparks from chimney	2	2,035	
					9,836
Dairies	3	Short circuit	1	$ 254	
		Sparks from smoke-stack	1	61	
		Spontaneous combustion	1	59	
					374
Dry-cleaning establishments	1	Electrical appliances	1		22
Dry-kilns	3	Sparks from locomotive	1	$ 4,598	
		Spontaneous combustion	1	200	
		Unknown	1	28,192	
					32,990
Dwellings	952	Ashes against wood	5	$ 670	
		Candle carelessness	15	1,171	
		Canned heat left burning	1	15	
		Clothes too near stove or stove-pipe	29	5,602	
		Coal-gas explosion	3	5,233	
		Coal-oil carelessness	8	12,641	
		Coal-oil, children with	1	2,200	
		Curtains from candle	1	8	
		Curtains from lamp	1	10	
		Curtains from stove	1	77	
		Defective brooder	2	2,081	
		Defective chimney	83	105,330	
		Defective fireplace	27	2,664	
		Defective furnace or furnace-pipe	7	5,188	
		Defective lamp	1	5	
		Defective matches	6	268	

TABLE IV.—CLASSIFICATION OF PROPERTY BURNED AND CAUSES—*Continued.*

Property.		Causes.		Amount of Loss.	
		Defective oil-stove	1	$ 110	
		Defective stove or stove-pipe	19	27,605	
		Defective wiring	7	4,684	
		Electrical appliances	40	18,903	
		Exposure	38	26,480	
		Fire-crackers	1	7	
		Furnace or furnace-pipe insufficiently protected	8	6,914	
		Gasolene carelessness	7	1,258	
		Gasolene, children with	2	303	
		Gas-plate insufficiently protected	4	779	
		Grease on stove	17	12,527	
		Gunpowder, child with	1	30	
		High-tension wires falling on building	1	450	
		Incendiary	10	12,877	
		Lamp explosion	5	17,187	
		Lamp upset	6	12,086	
		Lightning	3	224	
		Live coals	6	106	
		Match carelessness	16	2,680	
		Matches, children with	23	7,697	
		Matches, mice with	2	430	
		Mattress too near stove	3	80	
		Paper from fireplace	1	10	
		Rubbish around furnace	1	67	
		Short circuit	8	15,555	
		Smokers' carelessness	95	22,254	
		Sparks from burning rubbish	4	2,070	
		Sparks from bush fire	9	24,861	
		Sparks from chimney	163	92,949	
		Sparks from fireplace	53	3,315	
		Sparks from furnace	2	2,250	
		Sparks from locomotive	1	500	
		Sparks from mill burner	1	264	
		Sparks from steam-shovel	1	1,424	
		Sparks from stove or stove-pipe	13	4,398	
		Spontaneous combustion	12	39,764	
		Stove explosion	2	1,501	
		Stove or stove-pipe insufficiently protected	75	103,781	
		Sun's rays	1	25	
		Tar boiling over	3	1,400	
		Thawing pipes	5	468	
		Unknown	80	117,364	
		Varnish boiling over on stove	1	185	
		Wood too near furnace	1	58	
		Wood too near stove	9	7,375	
					$ 738,418
Dye-works	1	Gasolene carelessness	1		626
Electrical plants	1	Unknown	1		910
Electrical repair-shops	1	Hollow-shaft explosion	1		66
Electric-light poles	2	Exposure	1	$ 77	
		Smokers' carelessness	1	5	
					82
Factories (asphalt)	1	Hot gravel against wood	1		367
Factories (box)	9	Exposure	1	$ 2,500	
		Friction in pulley	1	117	
		Hot box	1	2,501	
		Overheating of dry-kiln	2	7,485	
		Sparks from furnace	1	25,049	
		Sparks from mill burner	1	200	
		Sparks from smoke-stack	1	203	
		Spontaneous combustion	1	1,266	
					39,321
Factories (brick and tile)	1	Unknown	1		20,000
Factories (fish meal and oil)	1	Smokers' carelessness	1		16,000
Factories (hat and cap)	1	Unknown	1		1,814

TABLE IV.—CLASSIFICATION OF PROPERTY BURNED AND CAUSES—*Continued.*

Property.		Causes.		Amount of Loss.	
Factories (sash and door)	2	Sparks from smoke-stack	1	$ 150	
		Unknown	1	3,145	
					$ 3,295
Factories (sheet metal)	1	Sparks from chimney	1	.....	75
Factories (soap)	1	Unknown	1	.....	1,500
Factories (steel products)	1	Ashes against wood	1	.....	10
Factories (wood-working)	1	Spontaneous combustion	1	.....	258
Fishing-boats	4	Carburettor back-firing	1	$ 3,800	
		Gasolene carelessness	2	3,500	
		Gasolene explosion	1	4,000	
					11,300
Fish-packing plants	1	Ashes against wood	1	.....	75
Foundries	4	Defective chimney	1	$ 622	
		Sparks from cupola	1	2,460	
		Unknown	1	1,030	
		Wood too near furnace	1	150	
					4,262
Freight-cars	5	Exposure	3	$ 1,550	
		Sparks from locomotive	1	30	
		Unknown	1	600	
					2,180
Garages	39	Carburettor back-firing	1	$ 6,193	
		Defective stove	1	2,812	
		Exposure	6	19,261	
		Gasolene carelessness	5	6,442	
		Gasolene explosion	1	4,750	
		Gasolene-torch explosion	2	165	
		Match carelessness	1	100	
		Short circuit	2	3,020	
		Smokers' carelessness	3	9,817	
		Sparks from chimney	1	2,058	
		Spontaneous combustion	3	5,681	
		Unknown	13	9,914	
					70,213
Golf-club houses	4	Defective fireplace	1	$ 36	
		Sparks from chimney	1	10	
		Sparks from stove-pipe	1	12	
		Unknown	1	5,325	
					5,383
Gravel plants	1	Sparks from mill burner	1	.....	20
Greenhouses	3	Furnace insufficiently protected	1	$ 150	
		Lantern too near rafters	1	7	
		Matches, children with	1	150	
					307
Halls	4	Defective chimney	1	$ 22	
		Sparks from chimney	1	2,723	
		Unknown	1	7	
		Wood too near furnace	1	726	
					3,478
Hospitals	1	Sparks from chimney	1	.....	200
Hospitals (dog)	1	Thawing pipes	1	.....	417
Hotels	51	Candle carelessness	1	$ 3	
		Defective chimney	2	14,366	
		Electrical appliances	2	30	
		Exposure	2	21,454	
		Incendiary	3	28,592	
		Match carelessness	1	150	
		Smokers' carelessness	32	8,709	
		Sparks from chimney	1	62	
		Unknown	7	70,846	
					144,212
Launches	5	Carburettor back-firing	2	$ 1,025	
		Gasolene carelessness	2	2,300	
		Match carelessness	1	500	
					3,825

TABLE IV.—CLASSIFICATION OF PROPERTY BURNED AND CAUSES—*Continued.*

Property.		Causes.		Amount of Loss.	
Laundries	5	Clothes too near stove	1	$ 914	
		Defective furnace or furnace-pipe	1	435	
		Sparks from smoke-stack	1	911	
		Unknown	1	70	
		Wood too near stove	1	800	
					$ 3,130
Lime plants	1	Overheating of lime-kiln	1		2,897
Logging camps	20	Ashes against wood	1	$ 8,733	
		Defective chimney	1	6,232	
		Engine back-firing	1	304	
		Exposure	1	164,234	
		Smokers' carelessness	2	1,502	
		Sparks from bush fire	2	7,637	
		Sparks from chimney	1	3,620	
		Sparks from engine	5	23,885	
		Sparks from slash fire	1	2,975	
		Sun's rays	1	49,583	
		Unknown	4	109,024	
					377,729
Lumber-piles	3	Sparks from bush fire	1	$ 500	
		Sparks from mill burner	1	19,313	
		Unknown	1	2,158	
					21,971
Lumber-yards	1	Exposure	1		27
Machine-shops	1	Sparks from mill burner	1		2,670
Mining property	6	Defective heater	1	$ 800	
		Short circuit	1	79,570	
		Sparks from bush fire	2	7,000	
		Sparks from copper mould	1	20	
		Sparks from furnace	1	100	
					87,490
Offices	18	Defective stove-pipe	1	$ 25	
		Defective wiring	1	103	
		Exposure	6	2,073	
		Hot poker left against woodwork	1	60	
		Match carelessness	1	80	
		Short circuit	1	36	
		Smokers' carelessness	3	42	
		Spontaneous combustion	1	5	
		Stove-pipe insufficiently protected	2	341	
		Unknown	1	417	
					3,182
Oil-tankers	1	Gasolene explosion	1		15,000
Photograph studios	2	Defective wiring	1	$ 1,312	
		Exposure	1	94	
					1,406
Planing-mills	1	Unknown	1		23,780
Playhouses (children's)	1	Matches, children with	1		5
Post-offices	1	Exposure	1		1,730
Post-offices and dwellings	2	Sparks from mill burner	1	$ 2,597	
		Stove-pipe insufficiently protected	1	85	
					2,682
Pottery plants	1	Sparks from furnace or furnace-pipe	1		2,900
Printing-offices	5	Defective chimney	1	$ 22	
		Exposure	2	1,230	
		Match carelessness	1	3,443	
		Smokers' carelessness	1	56	
					4,751
Railway stations	2	Stove insufficiently protected	1	$ 650	
		Unknown	1	1,800	
					2,450
Refineries (sugar)	1	Dust explosion	1		16,000
Restaurants	1	Grease on stove	1		257
Road-houses	1	Incendiary	1		45

TABLE IV.—CLASSIFICATION OF PROPERTY BURNED AND CAUSES—*Continued.*

Property.		Causes.		Amount of Loss.	
Rooming-houses	13	Electrical appliances	3	$ 23	
		Exposure	1	152	
		Furnace insufficiently protected	1	850	
		Rubbish around furnace	1	2,803	
		Short circuit	1	350	
		Smokers' carelessness	3	29	
		Sparks from chimney	2	780	
		Sparks from fireplace	1	24	
					$ 5,011
Rooms and offices	2	Smokers' carelessness	1	$ 9	
		Sparks from chimney	1	5	
					14
Sacked wheat	1	Unknown	1		300
Sawmills	29	Exposure	1	$ 1,780	
		Hot box	2	6,332	
		Incendiary	1	2,000	
		Match carelessness	1	250	
		Sparks from boiler	3	1,062	
		Sparks from bush fire	3	46,893	
		Sparks from Dutch oven	1	1,494	
		Sparks from engine	1	3,000	
		Sparks from mill burner	8	249,026	
		Unknown	8	275,180	
					587,017
Schools	10	Defective chimney	1	$ 37,257	
		Lightning	1	172	
		Phosphorus	1	32	
		Sparks from chimney	4	138	
		Spontaneous combustion	1	627	
		Unknown	2	1,450	
					39,676
Sheds	27	Ashes against wood	1	$ 30	
		Candle carelessness	1	250	
		Defective lamp	1	200	
		Defective stove-pipe	2	65	
		Exposure	1	505	
		Grease on stove	1	29	
		Lime ignited by water	1	250	
		Match carelessness	1	100	
		Matches, children with	5	725	
		Short circuit	1	375	
		Smokers' carelessness	3	315	
		Sparks from chimney	1	10	
		Stove-pipe insufficiently protected	1	100	
		Unknown	7	1,005	
					3,959
Shingle-mills	8	Overheating of dry-kiln	1	$ 27,865	
		Sparks from chimney	1	302	
		Sparks from locomotive	1	14,755	
		Sparks from mill burner	1	13,846	
		Unknown	4	49,895	
					106,663
Slaughter-houses	1	Sparks from locomotive	1		3,200
Stables	7	Ashes against wood	1	$ 15	
		Exposure	1	24	
		Smokers' carelessness	4	3,738	
		Sparks from chimney	1	829	
					4,606
Stores	77	Ashes against wood	1	$ 23	
		Defective chimney	5	5,701	
		Defective wiring	1	350	
		Electrical appliances	5	525	
		Exposure	25	42,372	
		Gasolene carelessness	1	1,483	
		Grease on stove	2	1,444	
		Incendiary	3	2,788	

TABLE IV.—CLASSIFICATION OF PROPERTY BURNED AND CAUSES—*Continued.*

Property.		Causes.		Amount of Loss.	
		Lamp upset	1	$ 25	
		Match carelessness	3	251	
		Short circuit	1	50	
		Smokers' carelessness	13	8,916	
		Sparks from chimney	3	40	
		Sparks from stove or stove-pipe	1	4,800	
		Spontaneous combustion	2	3,301	
		Stove or stove-pipe insufficiently protected	3	3,951	
		Unknown	7	42,524	
					$ 118,544
Stores and apartments	7	Defective wiring	1	$ 14	
		Exposure	1	59	
		Oil-stove upset	1	71	
		Smokers' carelessness	2	308	
		Unknown	2	47	
					499
Stores and dwellings	37	Ashes against wood	1	$ 42	
		Defective chimney	1	2,450	
		Defective fireplace	2	132	
		Exposure	6	19,497	
		Gasolene carelessness	1	300	
		Lamp explosion	2	9,551	
		Match carelessness	2	445	
		Smokers' carelessness	2	770	
		Sparks from burning rubbish	1	20	
		Sparks from chimney	4	17,006	
		Sparks from furnace	1	58	
		Sparks from stove	1	1,839	
		Stove or stove-pipe insufficiently protected	3	3,842	
		Unknown	10	45,120	
					101,072
Stores and hotels	6	Smokers' carelessness	4	$ 191	
		Sparks from fireplace	1	1,900	
		Unknown	1	5,776	
					7,867
Stores and offices	10	Defective matches	1	$ 53	
		Defective wiring	1	3,293	
		Exposure	1	4,522	
		Matches, mice with	1	1,062	
		Smokers' carelessness	2	28,092	
		Sparks from engine	1	113	
		Spontaneous combustion	1	1,169	
		Stove-pipe insufficiently protected	1	5	
		Tar boiling over	1	112	
					38,421
Stores, offices, and apartments	1	Smokers' carelessness	1	.....	7
Stores, offices, and rooms	1	Matches, mice with	1	.....	34
Stores and post-offices	1	Unknown	1	.....	11,839
Stores and rooms	19	Defective stove	2	$ 730	
		Exposure	1	138	
		Grease on stove	1	560	
		Incendiary	1	67	
		Smokers' carelessness	11	3,619	
		Stove insufficiently protected	2	1,715	
		Tar boiling over	1	5,400	
					12,229
Street-cars	2	Short circuit	2	.....	125
Tanneries	1	Unknown	1	.....	50,990
Telephone exchanges	2	Exposure	1	$ 150	
		Sparks from chimney	1	25	
					175
Tents	1	Sparks from stove	1	.....	10
Theatres	6	Defective film	2	$ 367	
		Smokers' carelessness	2	277	
		Unknown	2	10,837	
					11,481

TABLE IV.—CLASSIFICATION OF PROPERTY BURNED AND CAUSES—*Continued.*

Property.		Causes.		Amount of Loss.	
Tool-houses	1	Unknown	1		$ 400
Warehouses	103	Boiler insufficiently protected	1	$ 10,426	
		Defective blower	1	68	
		Exposure	80	453,631	
		Ignition of escaping gas by pilot-light	1	75	
		Incendiary	1	4,400	
		Match carelessness	2	430	
		Oil overflowing from furnace	1	226	
		Smokers' carelessness	3	10,276	
		Sparks from smoke-stack	1	5	
		Sparks from stove	1	1,000	
		Spontaneous combustion	3	68,092	
		Unknown	8	102,983	
					651,612
Water-tanks	1	Sparks from smoke-stack	1		40
Totals	1,834		1,834		$3,638,427

TABLE V.—SUMMARY.

	Fires reported.						Amount of Loss.					
	City Municipalities (33).	District Municipalities (29).	Village Municipalities (6).	Fire Districts (24).	Unorganized Districts (15).	Total.	City Municipalities.	District Municipalities.	Village Municipalities.	Fire Districts.	Unorganized Districts.	Total.
1926.												
January	70	35	.....	2	11	118	$ 180,642	$ 35,051	.....	$ 2,056	$ 21,142	$ 238,891
February	63	26	.....	7	18	114	38,387	22,937	.....	27,959	33,002	122,285
March	67	37	4	2	16	126	75,286	58,905	$ 5,638	3,025	38,710	181,564
April	68	48	4	.....	26	146	51,997	46,741	1,517	.....	55,180	155,435
May	91	33	1	2	21	148	97,543	50,653	4,000	4,890	29,488	186,574
June	71	45	1	1	25	143	44,588	92,873	1,300	4	97,817	236,582
July	91	48	5	5	53	202	45,091	98,455	38,795	6,878	570,478	759,697
August	78	32	.....	3	45	158	273,106	26,204	.....	1,263	109,377	409,950
September	77	48	.....	1	29	155	102,256	111,650	.....	124	112,743	326,773
October	62	41	1	2	25	131	15,331	40,190	23	18,106	74,831	148,481
November	63	43	1	1	25	133	20,160	87,831	58	30	172,316	280,395
December	177	51	1	2	29	260	385,039	86,691	25	601	119,444	591,800
Totals, 1926	978	487	18	28	323	1,834	$1,329,426	$ 758,181	$ 51,356	$ 64,936	$1,434,528	$ 3,638,427
Totals, 1925	841	409	29	54	341	1,674	1,653,894	766,829	66,794	166,212	1,523,112	4,176,841
Totals, 1924	898	411	10	30	333	1,682	1,689,953	781,790	29,920	58,879	1,489,906	4,050,448
Totals, 1923	859	372	.....	18	300	1,549	1,617,505	1,120,047	.....	38,054	1,454,311	4,229,917
Totals, 1922	934	388	.....	19	348	1,689	1,297,245	750,346	.....	27,213	1,177,564	3,252,368
	4,510	2,067	57	149	1,645	8,428	$7,588,023	$4,177,193	$148,070	$355,294	$7,079,421	$19,348,001

TABLE VI.—LOSS OF LIFE, 1922–26.

Occupancy.	Cause of Fire.	Loss of Life.	
		Adults.	Children.
Boarding-house	Unknown	5	....
Dwelling	Coal-oil carelessness	1	....
Dwelling	Coal-oil, children with	....	2
Dwelling	Gasolene, children with	....	2
Dwelling	Gunpowder, child with	....	1
Dwelling	Matches, children with	....	1
Dwelling	Stove insufficiently protected	1	....
Dwelling	Unknown	....	4
Fishing-boat	Gasolene carelessness	1	....
Totals, 1926		8	10
Totals, 1925		5	4
Totals, 1924		1	5
Totals, 1923		5	9
Totals, 1922		8	2

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

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PROVINCE OF BRITISH COLUMBIA

REPORT

OF THE

COMMISSIONER OF FISHERIES

FOR THE YEAR ENDED DECEMBER 31ST, 1926

WITH APPENDICES

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

To His Honour ROBERT RANDOLPH BRUCE,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

I beg to submit herewith the Report of the Provincial Fisheries Department for the year ended December 31st, 1926, with Appendices.

WILLIAM SLOAN,

Commissioner of Fisheries.

Provincial Fisheries Department,

Commissioner of Fisheries' Office,

Victoria, British Columbia, December 30th, 1926.

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FISHERIES COMMISSIONER'S REPORT FOR 1926.

VALUE OF CANADIAN FISHERIES AND STANDING OF PROVINCES, 1925.

The value of the fishery products of Canada for the year 1925 totalled $47,926,802, a gain over 1924 of $3,392,567.

During the year 1925 British Columbia produced fishery products of a value of $22,414,618, or 46 per cent. of Canada's total for that year. The value of the catch in 1925 exceeded that of 1924 by $1,157,051.

In 1925 British Columbia again led all the Provinces, as she has done for many years, in the value of her fishery products. Her output in 1925 exceeded in value that of Nova Scotia, the second in rank, by $12,200,839, and her output exceeded that of all the other Provinces combined by $7,100,884.

The capital employed in the fisheries of Canada in 1925 totalled $46,411,647, of which $21,674,584, or 46 per cent., was employed in British Columbia.

The persons engaged in the fisheries of Canada in 1925 totalled 69,478, of whom 17,382, or 25 per cent., were engaged in British Columbia. Of those engaged in British Columbia, 9,944 were employed in catching and handling the catch and 7,438 in packing and fish-curing.

In 1925 British Columbia, with but 25 per cent. of the total persons engaged in the fisheries of Canada and but 46 per cent. of the capital employed, produced 46 per cent. of the value of the fishery products of Canada.*

The following statement gives in the order of their rank the value of the fishery products of the Provinces of Canada for the years 1921 to 1925, inclusive:—

Province.	1921.	1922.	1923.	1924.	1925.
British Columbia	$13,953,670	$18,849,658	$20,795,914	$21,257,567	$22,414,618
Nova Scotia	9,778,623	10,209,258	8,448,385	8,777,251	10,213,779
New Brunswick	3,690,726	4,685,660	4,548,535	5,383,809	4,798,589
Ontario	3,065,042	2,858,122	3,159,427	3,557,587	3,436,412
Quebec	1,815,284	2,089,414	2,100,412	2,283,314	3,044,919
Prince Edward Island	924,529	1,612,599	1,754,980	1,201,772	1,598,119
Manitoba	1,023,187	908,816	1,020,595	1,232,563	1,466,939
Saskatchewan	243,018	245,337	286,643	482,492	494,882
Alberta	408,868	331,239	438,737	339,107	458,504
Yukon	28,988	10,107	11,917	18,773	15,370
Totals	$34,931,935	$41,800,210	$42,565,545	$44,534,235	$47,942,131

THE SPECIES AND VALUE OF FISH CAUGHT IN BRITISH COLUMBIA.

The total value of each principal species of fish taken in British Columbia for the year ended December 31st, 1925, is given in the following statement:—

Salmon	$14,973,885
Halibut	3,891,819
Herring	1,717,985
Cod	264,036
Pilchards	182,911
Clams and quahaugs	161,764
Black cod	114,315
Crabs	50,605
Soles	36,404
Shrimps	23,331
Carried forward	$21,417,055

* As this report goes to press the Commissioner is in receipt of a preliminary report on the fishery products of the Province for the year 1926, issued by the Dominion Bureau of Statistics, R. H. Coats, Statistician, from which the following data are taken: The value of the fishery products in 1926 totalled $27,367,109. It exceeded the previous high record of 1918 by $84,886. Of the total, salmon produced $18,776,762, or 69 per cent., halibut produced $4,068,868, and fish oils and meals $1,325,672. Capital invested, $31,611,265. Persons engaged, 20,213.

THE SPECIES AND VALUE OF FISH CAUGHT IN BRITISH COLUMBIA—*Continued.*

Brought forward	$21,417,055
Oysters	23,107
Flounders, brill, plaice, etc.	20,914
Red cod, etc.	18,625
Perch	9,693
Smelts	7,434
Sturgeon	5,604
Octopus	5,056
Skate	4,259
Oolachans	2,147
Whiting	1,048
Trout	602
Bass	186
Whales	309,608
Fish-oils, grayfish, etc.	313,085
Fish-meals	202,854
Fish-fertilizer	20,825
Fur-seals	52,373
Miscellaneous	143
Total	$22,414,618

The above statement shows that the salmon-fisheries of the Province in 1925 produced $14,973,885, or 66 per cent. of the total value of the fishery products.

The total amount of halibut landed was marketed for $3,891,819 and herring for $1,717,985.

The foregoing data are derived from the "Fisheries Statistics of Canada," issued by the Bureau of Statistics, Ottawa.

THE PRODUCTION OF FISH OILS AND MEALS.

During the year the fish-reduction plants in the Province produced 2,402,242 imperial gallons of oil and 10,850 tons of fertilizer, as against 713,237 gallons of oil and 3,229 tons of meal in 1925. There was a great increase in the production of pilchard oil and meal. The fifteen fish-reduction plants on the west coast of Vancouver Island—many of which were operated for the first time—produced 1,898,721 imperial gallons of oil and 7,948 tons of meal. During the months of July and August most of the plants were operated to capacity. Fishing was largely confined to estuary waters. The gear designed for operation in the open sea proved too light to handle a catch in rough waters off the coast.

Several new fish-reduction plants for the use of pilchards will be established and be in operation next year. It is anticipated that production will be materially increased in 1927.

The production of whale-oil in the Province in 1926 totalled 510,100 imperial gallons. But two whaling fishing stations were operated and they handled 269 whales, as against 351 in 1925.

PACK OF BRITISH COLUMBIA SALMON, SEASON 1926.

	Fraser River District.	Skeena River District.	Rivers Inlet District.	Nass River District.	Queen Charlotte Islands District.	Vancouver Island District.	Outlying Districts. *	Grand Total.
Sockeyes	85,689	82,360	65,581	15,929	708	25,070	61,675	337,012
Fancy Red Springs	9,710	13,377	66	4,616	.....	3,952	914	32,635
Standard Springs	3,073	4,975	523	751	560	609	1,523	12,014
White Springs	20,169	2,242	96	597	.....	661	765	24,530
Bluebacks	13,736	.....	.....	.....	.....	5,380	29	19,145
Steelheads	40	754	11	375	.....	3	973	2,156
Cohoes	21,783	30,208	7,286	4,274	3,716	51,551	43,631	162,449
Pinks	32,256	210,081	12,815	50,815	200,512	86,113	180,420	773,012
Chums	88,495	63,527	11,727	15,392	168,319	174,383	180,363	702,237
Grand totals	274,951	407,524	98,105	92,749	373,815	347,722	470,324	2,065,190

* Including Smith Inlet.

The data used here were furnished by the British Columbia Division, Canned Salmon Section of the Canadian Manufacturers' Association. We have, however, credited the sockeye salmon packed at Esquimalt to the Fraser River District, because it consisted of sockeye seeking that watershed to spawn. Likewise we have credited Rivers Inlet with the sockeye caught there and packed at Namu. In consequence the figures given differ from the association's statement and those that are given in the valued "Year-book" of the *Pacific Fisherman* for 1926.

THE SALMON-PACK OF THE PROVINCE IN 1926.

The salmon-pack of the Province in 1926 totalled 2,065,190 cases, as against 1,719,282 cases in 1925, 1,745,313 cases in 1924, 1,341,677 cases in 1923, and 1,290,336 cases in 1922.

The pack of 1926 is the largest made in the Province. It exceeded the previous high record of 1924 by 319,877 cases.

The pack of 1926 consisted of 337,012 cases of sockeye, 69,179 cases of springs, 162,449 cases of cohoes, 773,012 cases of pinks, and 702,237 cases of chums. The sockeye-pack was 55,506 cases less than in 1925. As in the two previous years, the bulk of the pack consisted of pinks and chum salmon. Their combined pack totalled 1,475,249 cases, a gain over that of the previous high record of 1925 of 421,875. The combined pack of pinks and chums produced 71 per cent. of the total pack of all species in 1926.

THE 1926 SALMON-PACK BY DISTRICTS.

The Fraser River System.—The catch of all species of salmon made in the Fraser River system within the Province totalled 274,951 cases. It consisted of 85,689 cases of sockeye, 32,952 cases of springs, 21,783 cases of cohoes, 32,256 cases of pinks, and 88,495 cases of chums.

The sockeye-catch in Provincial waters of the Fraser system produced the largest pack made in any year since 1917. On the other hand, the catch of sockeye in the State of Washington waters of the Fraser system produced a pack of but 44,673 cases, much the smallest ever made there.

The total pack of sockeye in the entire Fraser River system in 1926 was 130,362 cases. It was 17,046 cases less than that made in 1925. It was 29,964 cases more than that made in the fourth preceding year. It was 147,970 cases less than the average for the past eight years.

The Skeena River.—The salmon-pack in the Skeena River District in 1926 totalled 407,524 cases, consisting of 82,360 cases of sockeye, 20,594 cases of springs, 30,208 cases of cohoes, 210,081 cases of pinks, and 63,527 cases of chums. The pack of sockeye was slightly larger than that of 1925. The pack of pinks exceeded that of 1925 by 80,002 cases. The pack of springs was 2,851 cases less.

Rivers Inlet.—The salmon-pack in Rivers Inlet in 1926 totalled 98,105 cases. It consisted of 65,581 cases of sockeye, 7,286 cases of cohoes, 12,815 cases of pinks, 11,727 cases of chums, and 685 cases of springs. The catch of sockeye, though much less than last year—the high record year—shows a gain over its brood-years 1921 and 1922, when the packs were 48,615 and 53,584 respectively.

Smith Inlet.—The salmon-pack statement for 1926 of the Canned Salmon Branch of the Canadian Manufacturers' Association shows the packs made at Smith Inlet. Heretofore the packs made at Smith Inlet have either been attributed to Rivers Inlet or outlying districts. The pack at Smith Inlet this year totalled 17,921 cases, consisting almost wholly of sockeye.

The Nass River District.—The salmon caught in the Nass River District in 1926 totalled 92,749 cases. It consisted of 15,929 cases of sockeye, 5,964 cases of springs, 4,274 cases of cohoes, 50,815 cases of pinks, and 15,392 cases of chums. The sockeye-pack is the smallest since 1921.

The Vancouver Island District.—The catch of salmon in the Vancouver Island District in 1926 totalled 347,722 cases. It was 83,818 cases greater than in 1925. It was, however, not the highest record. It was 42,093 cases less than in 1918. The pack consisted of 25,070 cases of sockeye, 5,222 cases of springs, 51,551 cases of cohoes, 86,113 cases of pinks, and 174,383 cases of chums.

Queen Charlotte Islands District.—The catch of salmon in Queen Charlotte Islands produced a pack of 373,815 cases, much the largest ever made there. It exceeded the pack of 1925 by 292,681 cases. It consisted almost wholly of pinks and chums—200,512 cases of pinks and 168,319 cases of chums.

Mild-cured Salmon.—The production of mild-cured salmon in the Province in 1926 was but 2,183 tierces, representing approximately 1,746,400 lb. of spring salmon. It was 915 tierces less than in 1925 and 786 less than in 1924.

The Appendix of this report contains detailed statements, giving by districts the pack of each species since 1911.

CONDITIONS OF THE SOCKEYE-SALMON FISHERY OF THE FRASER RIVER SYSTEM.

The increased catch of sockeye in the Provincial waters of the Fraser River system in 1926 attracted much local attention. It produced a pack of 85,689 cases, much the largest pack since 1917. The catch of sockeye in the State of Washington waters of the Fraser River system was, however, the smallest ever made there. It produced a pack of but 44,673 cases. The total sockeye-pack for the entire system in 1926 was 130,362 cases. It was 17,046 cases less than in 1925.

The increased catch of sockeye in Provincial waters and the decreased catch in State of Washington waters of the Fraser system in 1926 is attributed to an unusual occurrence. Ordinarily the bulk of the sockeye-pack made in the system is made in Washington waters in July and August. This year the bulk of the catch was made in Provincial waters and it was made in September and October. The pack records of the Fraser River system in the period 1915–25, inclusive, show that 70 per cent. of the total catch was made in Washington waters and 30 per cent. in Provincial waters. In 1926 the proportions were reversed for the first time in many years. Sixty-seven per cent. was made in the Province and but 33 per cent. in Washington waters.

The increased catches of sockeye made in Provincial waters and the decreased catch in Washington waters is attributed to the fact that in September and October a very considerable number of sockeye gained access to the Gulf of Georgia, in the Province, without being intercepted in the waters to the south or north of that gulf. Fishermen engaged in fishing in the Gulf of Georgia and in the channels of the Fraser made good catches in September and October, while those engaged in the waters to the south and north of that gulf made no catches of sockeye in those months.

Having gained access to the Gulf of Georgia without being intercepted, the runs in September and October were only drawn upon by the Provincial fleet of less than a thousand gill-net fishing-boats, and as their operations were, by Canadian regulations, confined to five days each week in the gulf and the Fraser channels up to New Westminster Bridge, and to four and a half days each week up to Mission Bridge, the number taken from the runs was smaller than usual, and the number which escaped capture and reached the spawning-beds of the Fraser was proportionately greater than when the runs are drawn upon by both the Provincial and the Washington fishermen. The number of sockeye that escaped capture and reached the spawning-beds was greater than in any year since 1913.

THE INCREASED DRAIN ON PINK AND CHUM SALMON—THE NEED OF GREATER PROTECTION.

There has been such an increase in the catch of pink and chum salmon in Provincial waters in the last five years as to occasion grave concern to all who study the conditions of the salmon-fisheries of the Province. That the supply of pink and chum salmon in Provincial waters cannot long withstand such a heavy drain as has been made in the last three years is manifest. The catches must be curtailed or the supply will be exhausted within a few years.

The bulk of the catches of pink and chum salmon made in the Province are taken from estuary waters close to the mouths of comparatively small streams by means of purse-seines. There has been a startling increase in the catch and in the use of purse-seines in the last five years. Many of the nets are short in length, that they may be effectively pursed in limited areas where the fish are compactly schooled waiting for the flood of the tide in order to enter the streams. There is immediate need that the use of short nets be prohibited. Short nets are not only effectively used in limited areas, but being short they are frequently pursed illegally in closed areas where long nets could not be used. Further, in many waters the use of purse-seines should be permitted one tide only every twenty-four hours.

The following statement shows the number of purse-seines licensed and the pack of pink and chum salmon for each of the last five years:—

	Number licensed.	Cases of Pink and Chum Salmon.
1922	143	740,183
1923	194	855,987
1924	227	1,226,454
1925	302	1,053,374
1926	406	1,475,249

REPORTS FROM SALMON-SPAWNING AREAS OF BRITISH COLUMBIA WATERS.

Following the practice adopted by the Department in 1901, of inspecting the salmon-spawning areas of the principal waters of the Province during the spawning period, the Department again inspected the spawning areas of the Fraser, Skeena, and Nass Rivers and Rivers and Smith Inlets this year. The following is a brief summary of the reports, which are to be found in full in the Appendix of this report:—

The Fraser River.—The inspection of the spawning-beds of the Fraser River was again made by Mr. Babcock, his twenty-fourth inspection.

The number of sockeye that reached the spawning areas of the Fraser River basin above Hell's Gate Canyon this year was surprisingly large—larger, it is estimated, than in any season since 1913. Conservative estimates of the number which reached the Little Shuswap and Adams Rivers in the lower section of the Shuswap-Adams Lakes section place their number between three and four hundred thousand. Some experienced observers estimated that between four and five hundred thousand sockeye spawned in those rivers this year.

The sockeye which spawned there this year entered the Lower Fraser the last of September and in early October. The fish were large and had all the brilliant outward colouring of the races of sockeye which formerly spawned in every section of the Upper Fraser basin. They were much more highly coloured than those which spawn in the Birkenhead River, at the head of Harrison-Lillooet Lakes section, and much larger and much more brilliantly coloured than the races of sockeye that spawn in Cultus, Pitt, and the small lakes of the Lower Fraser. Judging from their size and brilliant colouring, they were manifestly the product of fish which spawned in the Shuswap section.

Sockeye in numbers were not observed in any other tributaries of the Shuswap area than those mentioned, and the number of sockeye that spawned in other lake sections of the Upper Fraser basin, which includes Quesnel, Chilko, Seton, and Anderson Lakes, was smaller than in 1925, and not larger than the average of recent poor years.

The run of sockeye to the Birkenhead River, at the head of the Harrison-Lillooet Lakes section, which is included in the lower section of the Fraser River basin, was large—fully equal, if not greater than the average for the last eight years. The yearly run to this section shows no sign of diminishing numbers. It has been fully maintained. The hatchery on the Birkenhead collected 43,000,000 sockeye-eggs and, in addition, the beds of the river were abundantly seeded. The number of sockeye that reached other sections of the Lower Fraser was up to the average of recent years.

Due to the increased seeding of the spawning-beds of the Shuswap Lake section and the average seeding of the beds in the lower section of the Fraser this year, there is a prospect that the run of sockeye to the Fraser four years hence will be larger than this year or any year since 1917.

Rivers Inlet.—The inspection of the spawning areas of the Rivers Inlet run was again made by Fishery Officer A. W. Stone.

The sockeye that ran to Rivers Inlet this year were the product of the brood-years 1921 and 1922, years which produced packs of 48,615 and 53,584 cases respectively. The reports from the spawning area of the Rivers Inlet run clearly indicate that there was a greater escapement this year than in either of the brood-years, and that the beds were better seeded than in either of those years, and as water and weather conditions were favourable it is anticipated that the return to Rivers Inlet, where the run is composed of more or less equal numbers of four-year-old and five-year-old fish, four and five years hence will be greater than it was this year.

Smith Inlet.—The inspection was again made by Fishery Officer A. W. Stone.

The number of sockeye which spawned on the beds in the Smith Inlet area this year was materially larger than in the brood-years 1921 and 1922, and should result in an increase in the runs four and five years hence.

The Skeena River.—The inspection of the spawning-beds of the Skeena was again made by Fishery Officer Robert Gibson.

The runs of sockeye to the Skeena, like those to Rivers and Smith Inlets, consist of four-year-old and five-year-old fish. The run this year was the joint product of the spawnings in 1921 and 1922, two of the poorest brood-years recorded on the Skeena. The catch this year produced a pack of 74,000 cases, a gain of over 33,000 cases over 1921, which produced the five-year-old fish of this year's run; and it produced 20,000 cases less than in 1922. The reports from the spawning area this year indicate that the beds were much more abundantly seeded than in either of the brood-years and compared favourably with former good year seedings. The hatcheries without difficulty obtained their full quota of eggs. The effect of the forty-eight-hour weekly closed season was made manifest on all the beds. There should be a good return from this year's spawning.

The Nass River.—Fishery Inspector C. P. Hickman again inspected the spawning areas of the Nass River. His reports indicate that the escapement of sockeye which reached them was much smaller than in recent years. None of the beds were well seeded. Conditions on the Nass are not favourable. There is no apparent indication of the maintenance of the sockeye run; it appears to be declining.

THE OUTLOOK FOR THE SALMON RUNS OF 1927.

The Fraser.—As the sockeye run to the Fraser in 1927 will consist almost wholly of four-year fish derived from the spawning of 1923, it is interesting to note that the reports from the spawning areas in that year indicate that the number of sockeye that reached the beds was small—"less than in any previous year." The Birkenhead River and the other sections of the Lower Fraser basin were the only ones in which any considerable number was noted, and their seeding was not so extensive as to justify anticipating an increased run in 1927.

Rivers Inlet.—The sockeye run of 1927 to Rivers Inlet will consist of the five-year-old fish from the spawning of 1922 and the four-year fish from 1923. The pack in 1922 was but 53,584 cases and the spawning-beds in that year were not well seeded. There is therefore no reason to anticipate a goodly number of five-year fish in 1927. On the other hand, the four-year fish in the 1927 run will be drawn from the seedings in 1923, a year in which the pack totalled 116,850 cases, and in which it was reported that the beds were more abundantly seeded than in any former recorded year. In consequence of these statements it is anticipated that there will be a light run of five-year-old fish in 1927 and a large run of four-year-olds. Combined, the run should be satisfactory.

Skeena River.—Prospects for a good run of sockeye to the Skeena in 1927 are excellent. It will be derived from the spawnings of 1922 and 1923, when the packs totalled 96,277 and 131,731—two good years—and in which the reports from the spawning areas indicated a good seeding.

Nass River.—The run to the Nass in 1927 will come from the spawnings of 1922 and 1923, which produced packs of 31,277 and 17,821. The reports from the beds in those years indicated a good seeding in the former year and a very poor seeding in the latter. Conditions on the Nass are not satisfactory.

CONTRIBUTION TO THE LIFE-HISTORY OF THE SOCKEYE SALMON.

The twelfth contribution to the series of papers on the life-history of the sockeye salmon issued by the Department, which is contained in the Appendix of this report, is contributed by Dr. W. A. and Dr. Lucy S. Clemens. It deals with the constituents of the runs of sockeye to our principal waters in 1926. The following is a brief summary:—

In dealing with the sockeye run to the Fraser, attention is called to the fact that the extent of the run and the size of the pack was above expectancy, due to the appearance of a large late run the last of September, the bulk of the escapement of which proceeded to Shuswap Lake. The distribution of the catch is interesting in that the British Columbia pack exceeded that of the State of Washington by 41,016 cases. There has been much conjecture as to the origin of the late portion of the run. It is apparent that before extraordinary explanations are resorted to all available data should be studied to see if the run cannot be accounted for in the

natural course of events. In this connection, Drs. Clemens state, it is interesting to note that in 1922 the British Columbia pack exceeded that of Washington by slightly over 3,000 cases, and that in only one other year since 1910 has there been a similar occurrence—namely, 1915, when the British Columbia pack exceeded the Washington pack by 26,000 cases. In 1922 there was a late run of sockeye to the Shuswap Lake area that surpassed any of the preceding eight years. In that year Fishery Officer Shotton, in charge of the Shuswap section, reported that the run was exceptionally good and that a very conservative estimate placed the number which spawned in Little River at six or eight thousand. Mr. Shotton also stated that in 1922 two runs of sockeye appeared in Adams River—one on October 6th, which was light, and another on October 25th, which was heavy. In 1926 the late run reached the Fraser on September 27th and Adams River about October 3rd. Referring to Mr. Shotton's statement that a very conservative estimate of the number of spawning sockeye seen in Little River in 1922 was 8,000, Drs. Clemens express the view that it was without doubt a very conservative estimate for that number and, scattered over such a stream as Little River, would not be impressive. Mr. Shotton's recent statement that not less than 20,000 spawned in Adams River in 1922 would give a total estimate of 28,000 in the two rivers, which would indicate that more than 50,000,000 eggs were deposited that year. Mr. Babcock estimated the number of sockeye he saw in Adams and Little Rivers in October, 1926, at between 300,000 and 400,000; obviously such a return could scarcely have resulted from the spawning of 28,000 sockeye, but since the latter estimate is a very conservative one, there can be no doubt that at least the bulk of them did.

In March, 1923, a planting of 1,176,000 eyed sockeye-eggs was made in Eagle River, a tributary of Upper Shuswap Lake. It has been suggested that possibly the return from that planting accounted for the run of 1926 to Adams River and Little River, but since that planting was at best less than 3 per cent. of the naturally deposited eggs, it is apparent that the return could have formed but a very small part of the run, even though it might have gone there instead of to Eagle River.

Since the run of sockeye to the Fraser is composed predominately of four-year-old fish, the bulk of the 1926 fish were undoubtedly descendants of the 1910–14–18–22 cycle. The figures given in Table I. of the report (*see* page 31) show that in the early years the runs of this cycle were very large, approximating those of the big cycle; that is, the 1909–13–17–21–25 series. The former cycle is the only one showing a tendency towards recuperation, and this recovery is largely the result of the development of the late run to Shuswap Lake. The significance lies in the apparent fact that a remnant of an up-river race is building itself up. It is indicative of the recuperative possibilities of the Fraser and of the possible lines of procedure which may profitably be followed in attempting to assist in the rehabilitation of the runs to the upper river-basin.

Drs. Clemens call attention to the fact that the sockeye run to the Fraser in 1927 should be the descendants of the 1923 run, which produced the second smallest pack in the history of the Fraser. Moreover, the 1911–15–19–23 cycle has shown a very decided decline, as is shown in Table I. of the report. The reports from the spawning-beds in 1923 indicate that very few sockeye reached the areas above Hell's Gate, except the Shuswap area, where a few thousands spawned late in the season. The record indicates that there was a small late run in 1923. Although 6,000,000 eggs were planted in the Upper Fraser in 1923–24, it is evident that the returns from that number under the best of conditions cannot be great. Thus, in the ordinary course of events, the sockeye-pack of 1927 depends upon the extent of the run that was produced in the Lower Fraser; hence a very good run cannot be anticipated.

The scales of the 1927 sockeye run reported upon by Drs. Clemens consisted of 1,124 selected at random from fish caught in the traps in Juan de Fuca Strait from April 27th to August 30th.

As is usual, the one-year-in-lake-type prevailed, being represented by 995 individuals, or 89 per cent. of the whole. Seventy-five per cent. of the total of 1,124 were four years old, 23 per cent. five years old, and 2 per cent. three years old. Males were in excess, there being 496 to 475 females. The reverse was the case in 1925.

The average length of the four-year-old males and females is the lowest on record. The decrease in length is astonishing, being almost 1 inch less in the case of the males and ½ inch in females, as compared with the records of the previous year, which was the lowest up to that period. (*See* Table V., page 33.) During the last eight years there has been a decrease in average length of 1½ inches in the males and ½ inch in the females.

With the decrease in length there has also been a decrease in weight.

It is apparent that the races of larger individuals are decreasing in numbers either through selective action of fishing operations or natural causes. The opinion is expressed that there is but little doubt that fishing operations are responsible and indicate the great strain being put on the stock. There can be no question as to the reliability of the figures, since all the material examined has been collected from the traps at Sooke, and the sampling and measuring for years have been made by the same assistant. Drs. Clemens are here dealing with fish which approached the Fraser to the south of Vancouver Island from April to the end of September, and not with the fish which appeared later and comprised the run to Shuswap Lake either this year or in 1922.

The data concerning lengths and weights are given in Tables X. and XI., pages 35 and 36.

The Rivers Inlet Sockeye Run of 1926.—The sockeye run to Rivers Inlet in 1926 produced a pack of 65,581 cases. This falls in line with the 1911–16–21–26 series and is a fair pack for that series. Sixty per cent. of the run consisted of four-year-old fish, derived from the 1922 spawning, which consisted of 82 per cent. of four-year-old individuals. Forty per cent. of the run consisted of five-year-old fish, derived from the 1921 spawning, when the run consisted of 51 per cent. of five-year-old fish.

In the report for 1925 it was stated that the pack figures seemed to further confirm the opinion that there is a five-year cycle in Rivers Inlet (Table XIII.). While this is true and while the five-year-old fish appear to be the dominant factor in the runs, the occurrence of varying numbers of four-year-old fish makes the prediction of future runs difficult. The five-year group is fairly uniform; on the other hand, the four-year group shows great fluctuations. In view of such fluctuations, together with the high percentages of males, Drs. Clemens state that it would appear, as Dr. Gilbert suggested in his report for 1917, that there are present each year considerable numbers of males which have been precocious in development and have matured at four years of age instead of five. It may be recalled that in the Fraser there are precocious males maturing at three years of age.

The run of 1927 to Rivers Inlet will be derived from the brood-years 1922 and 1923. While the reports from the spawning-beds in 1922 indicate an abundant seeding, the run of that year consisted of only 18 per cent. of five-year-old fish, the smallest percentage of five-year-old fish on record. In his report on the run of 1922 Dr. Gilbert points out that, owing to a strike, fishing did not begin until about July 10th. He states: "At this time the run is in ordinary years reaching its culminating point and certain changes have occurred in its composition. One of these changes usually concerns the proportions of four- and five-year fish, the latter in most years running more heavily during the first part of the season. What allowance should be made for this factor it is impossible to judge, for the sequence is not exactly the same in runs of different years. However, the proportions of five-year fish were so much less than in any other year during the same period of the run that we are justified in concluding that this year-group was present in greatly reduced numbers in the run of 1922."

The four-year-old fish of the 1927 run should be derived from the spawning of 1923. The pack of 1923 was large and the report from the spawning-beds in that year indicated an abundant seeding, so that a fair number of four-year-old fish may appear. However, the 1907–12–17–22 cycle has with one exception produced small packs, and in view of the small percentage of five-year-old fish in the 1922 run it does not appear that a large run may be expected in 1927.

Drs. Clemens find the distribution of the sexes in the Rivers Inlet runs the most interesting and puzzling of the four systems under review. Throughout all the years of record the four-year-old males have far outnumbered the four-year-old females and the five-year-old females outnumbered the five-year-old males. During the past eleven years in the former group the males have formed an average of 71 per cent., while the average for the females was 29 per cent. In the latter group the males have averaged 39 per cent. and the females 61 per cent. over the same period. A similar condition occurs in the Skeena groups, but the discrepancy is not so pronounced. The total percentage of males in the 1926 run was only slightly higher than the total percentage of females—51 and 49 per cent. respectively. In 1922, one of the brood-years of the 1927 run, the percentages were 61 males and 39 females.

The Skeena River Sockeye Run of 1926.—As was anticipated in the report of last year, the Skeena pack of 1926 was only a fair one, some 82,360 cases. Nothing more could be expected from the brood-years 1921 and 1922, the former of which had the lowest pack on record. A run that fluctuates from year to year as much as the Skeena does can be judged best by grouping the years and comparing the averages. Thus combining the packs of the last twenty years in

four groups of five succeeding years each, the averages are as follows: 1907–11, 130,894 cases; 1912–16, 90,513 cases; 1917–21, 103,183 cases; 1922–26, 106,567 cases.

The deduction shown above is quite obvious—a decline, following which the run has been little more than maintaining itself.

Referring to Table XIX., page 42, it is seen that in the earlier years of the run—from 1912 to 1920—with but a single exception, the five-year group formed 50 per cent. or more of the runs. Since 1921 in only one year (1924) has this been true. A number of years ago Dr. Gilbert pointed out in general that the largest packs were associated with years in which the percentage of the five-year fish was greatest. It is interesting then to note that the pack of 1924 is the largest in the last six years. We are not able to offer an explanation for this apparent reversal in the proportions of four-year and five-year classes during recent years, and it does not seem to have changed the runs materially.

For years it has been more or less apparent that the Skeena run consists predominantly of two age-groups—namely, four-year-olds and five-year-olds. On this account the packs cannot be arranged in either four- or five-year cycles. If conditions are fairly stable and the packs bear some relation to the escapement, then taking the figures of 1914, where 75 per cent. of the pack consisted of five-year-old and 25 per cent. of four-year-old fish, it would be expected that in 1918 there should have been a pack of four-year-old fish of close to 30,000 cases and in 1919 a pack of five-year-old fish of 100,000 cases. Using this same method of calculation for 1915, the results give 42,000 for 1919 and 74,000 in 1920. The total for 1918 would be 142,000 cases. The actual pack in 1919 was 185,000. The following tabulation shows the correspondence between the actual pack and the calculated over a period of years:—

Year.	Actual.	Calculated.	Reports from Spawning-beds in Brood-years.
	----------	----------	1912, fair.
1917	66,000	66,000	1913, good.
1918	123,000	59,000	1914, very good.
1919	185,000	140,000	1915, very good.
1920	91,000	99,000	1916, fair.
1921	41,000	62,000	1917, no report.
1922	96,000	92,000	1918, no report.
1923	132,000	130,000	1919, good.
1924	145,000	144,000	1920, poor.
1925	78,000	106,000	1921, fair.
1926	82,000	88,000	1922, very good.
1927	----------	106,000	1923, very good.

Making allowance for the normal fluctuations which occur in any run, for the fact that only two age-groups have been considered, and for the fact that packs do not bear the same relation to the escapement year after year, it will be seen that the correspondence is fairly close and would seem to be additional evidence of the existence of two distinct groups in the Skeena runs. It is the only run in which two age-groups play rôles of equal importance. In the Fraser run the four-year-old one-year-in-lake class dominates. The Rivers Inlet run has two components, the five-year-old one-year-in-lake and the four-year-old one-year-in-lake, but the former is by far the more important element. The Nass run resembles the Fraser in having a single predominant group, but in this case it is the five-year-old two-years-in-lake class.

For the last nine years there has been a relatively close correspondence between the pack and the brood-years from which they have been derived. According to expectancy the pack of 1927 should reach the 100,000 mark. One brood-year, 1921, had a fairly high pack, but it did not contain many five-year-old fish, and, on the other hand, 1923 had a very good pack with a large per cent. of four-year-old individuals which should be spawning next year and which will likely form a large proportion of the run. In addition it was reported in both 1922 and 1923 that the spawning-beds of the Skeena basin were well seeded.

The Nass River Sockeye Run of 1926.—In dealing with the Nass run of sockeye in 1926, Drs. Clemens state that the apparent instability of the Nass River run has been proved out several times during the past few years and a fear that the run is materially declining has been expressed. As has been known for some time, the Nass cycle is a five-year one. In 1925

Drs. Clemens said that the outlook for 1926 was discouraging because its brood-year, 1921, had the smallest pack recorded. Consequently it is not surprising to find the pack of 1926 totalled but 15,929 cases. Looking at it simply as the second smallest pack on record, one might feel justified in accepting it as evidence of further decline. On the other hand, in viewing the situation as a whole, there seems to be reason for believing that the run has maintained itself during the last five years, for the average annual pack of this cycle—from 1922 to 1926—is 23,512 cases, against 19,673 cases for the preceding cycle, 1917 to 1921. Furthermore, in 1925 attention was called to the fact that the packs for 1923, 1924, and 1925 showed a rather close correspondence to the packs of their brood-years, 1918, 1919, and 1920 respectively, and likewise there is a similar correspondence between 1926 and 1921. This tendency of return to normal expectancy, together with the fact that the brood-years for 1927 and 1929 had large packs, and that three out of five of Inspector Hickman's reports for the past five years state that the spawning-beds were very well seeded—the fish being exceedingly numerous—are hopeful signs. If reliance can be placed on such signs as a brood-year pack of 31,277 cases with 90 per cent. of the run five-year-old fish, and the spawning-bed reports, then there should be a good pack at the Nass in 1927.

In dealing with the age-groups in the sockeye run to the Nass, Drs. Clemens state that their consideration is always more interesting than that of the age-groups of the Fraser, Rivers Inlet, and the Skeena, from the fact that not only are older fish found than in the runs to the other waters, but also a greater variety in the combination of years the fish spend in fresh and salt waters. Some of the Nass fish go to the sea as fry and return at the end of either three or four years; again, others remain in fresh water one, two, three, or even four years before making their way to the ocean, where they stay from two to five summers before returning to their native stream. However, this great complexity usually resolves itself into eight principal age-groups. The analysis of the run of 1926 was based upon 1,856 samplings taken every three or four days over a period of two months, begininng June 23rd and extending to August 20th. The usual eight age-groups were all represented and an additional group, hitherto unreported, consisting of four full years spent in fresh water and three summers in the sea.

Attention is also called to a very interesting feature about the run to the Nass—the various age-groups show year after year a remarkable constancy in seasonal changes. The dominant group, the five-year-old two-years-in-the-lake, is present throughout the entire run with varying degrees of strength. The four-year-old one-year-in-the-lake and the five-year-old one-year-in-the-lake classes are also present throughout, but reach their greatest numbers during the second and third weeks of July. The two sea-type groups are confined to the early weeks and the six- and seven-year-old fish to the latter part.

As stated, the full text and the exhaustive tabulations of Drs. Clemens's report is reproduced in the Appendix of the report.

THE SALMON INVESTIGATION FEDERATION.

The International Pacific Salmon Investigation Federation—consisting of the executives and the scientific staffs of the Fisheries Departments of Canada, the United States, British Columbia, Washington, Oregon, California, and Alaska—that was formed in Seattle last year held its annual meeting in Seattle in December. The purpose of the Federation is to produce through joint and uniform effort the knowledge essential for the proper and scientific administration of the salmon-fisheries of the Pacific Coast in order to effectively conserve the great salmon resources of the North Pacific.

The conception of such conservation held by the Federation involves the utilization of the salmon resources to the fullest extent compatible with their preservation. The association seeks to be able to say definitely how many salmon can be taken from a given water and still leave sufficient for spawning purposes, so that the supply will continue year after year at a high level.

The last meeting of the Federation again brought out that the central idea of its programme is the production of the maximum yield obtainable from the salmon-fisheries and yet to maintain them. By the maximum yield is meant the greatest production of fish which may be taken for commercial purposes without endangering the future supply. To provide adequately for this the Federation seeks to ascertain what natural fluctuations in the abundance of salmon occur; the causes of fluctuations, particularly the immediate causes, though the ultimate causes should finally be determined; the intensity with which the commercial fishing is conducted and its effects on the future supply; the relative value of various measures which may be employed

to prevent depletion and to build up runs already depleted. With these fundamental requirements in mind, the Federation at its last meeting afforded free discussion of the following subjects:—

(1.) Collection of adequate and uniform statistics, which are of fundamental importance and should include not only data which will show the trend of fishing efforts.

(2.) Tagging experiments, which have been productive of a great deal of valuable information relative to the ocean migrations of salmon, and bearing on the relationship between salmon found in different regions. Such data are essential to reliable interpretation of statistics. The importance of such data is well known in the results obtained from the tagging off the west coast of Vancouver Island in the last two years, by which it was determined that fish caught, tagged, and liberated there were later recaptured in the Columbia, in Oregon, and the Sacramento, in California, as well as in British Columbia waters; and by the tagging along the Alaska Peninsula, through which it was determined that the fish caught in the Ikitan-Shumagin Island District were largely from the spawning-streams of Bristol Bay.

(3.) Scale-analysis of adult runs of salmon, which is essential to any understanding of the causes, either immediate or ultimate, responsible for the fluctuations in abundance, and likewise will provide the necessary data on which to base prophecies of future runs, and by which can be determined the productivity of each brood-year, the relative effects of heavy and light seeding of the spawning-beds, the effect of various methods of artificial propagation, and of modifications in the intensity of fishing, etc.

(4.) Study of adult returns of salmon from a known escapement to the spawning-grounds, a line of investigation that is being carried out on specially selected streams, where the production can be accurately determined, such as at Cultus Lake in British Columbia and on the Karluk and Chignik Rivers in Alaska. It is of course impossible to conduct such studies on large rivers like the Fraser and the Columbia, but it is believed that important principles may be discovered by an intense study of these selected streams which may be of universal application.

(5.) Stream surveys of spawning areas which, as conducted in British Columbia and Alaska, have proven of value as a substitute for escapement counts where these last are impossible.

(6.) Study of the production of seaward migrant salmon from known escapements of parent fish, being undertaken at Cultus Lake in British Columbia and at Karluk through marking experiments.

(7.) Efficiency of various methods of artificial propagation as compared with natural propagation, as such investigation is one of most practical importance and designed to improve present methods of fish-culture, as is shown by the experiments being conducted by the Biological Board of Canada in British Columbia and the United States Bureau of Fisheries, and the States on the Columbia, Klamath, and Sacramento Rivers.

(8.) The effect of transplanting of eggs and fry from one stream to another.

(9.) Improvement of spawning areas and overcoming obstacles, natural and artificial, to the ascent of spawning salmon and the descent of the seaward migrants, the most important by far being the question that pertains to the possibility of providing efficient passage-way for both adult and young salmon over high dams.

(10.) The life-history in fresh water, with particular attention to the factors affecting survival during the period of the salmon's life, which includes the rate of the development of the eggs, the growth and habits of the young and allied problems, as well as their bearings on the problems of natural propagation and those of fish-culture.

The Seattle meeting of the Federation demonstrated the value of such conferences. Every leading fishery executive and scientific investigator of the Pacific Coast States was in attendance. It was by far the most interesting and productive meeting held by the association.

RESULTS OF SALMON-TAGGING IN BRITISH COLUMBIA WATERS IN 1925.

The tagging of salmon experiments conducted in Provincial waters in 1925 have added so materially to the knowledge of the movements of spring salmon (*O. tschawytscha*) that the following digest of the data contained in Paper No. 9, Volume 3 of the Contribution to Canada's Biology and Fisheries issued by the Biological Board of Canada, is inserted here. The Department is indebted to the Biological Board for permission to reproduce the tabulations and for the use of the plates and maps used in the original publication on salmon-tagging experiments in British Columbia waters. Tagging was conducted in accordance with the programme adopted

by the Pacific Salmon Investigating Federation. During the season of 1925, 1,399 spring, 1,178 sockeye, and 51 cohoe salmon were tagged and liberated in British Columbia waters.

Tagging was conducted on the west coast of Vancouver Island between May 25th and June 25th. During that period 1,125 spring and 51 cohoe salmon were tagged and liberated. Experiments were also conducted on the west coast of Queen Charlotte Islands between June 19th and July 25th, and 659 sockeye were tagged at Haystack Island, at the southern entrance of Portland Canal, from August 3rd to the 21st, and 519 sockeye were tagged at Deepwater Bay, Seymour Narrows, from August 7th to the 14th.

The salmon tagged on the west coast of Vancouver and Queen Charlotte Islands were secured from market fishermen using trolls. The fish were paid for at current market rates. The sockeye at Haystack were secured from salmon-traps and the sockeye tagged at Deepwater Bay were taken from purse-nets.

The tags used in the experiments were aluminium plates ⅜ inch broad by 1/16 inch thick and bent into a rectangle 1 inch long, and bearing on the outer surface the letters "B.C." and numerals. The tags were secured to the smaller fish in the scale region at the base of the tail, as shown in Fig. No. 1, by means of pliers shown in Fig. No. 2. The above-described tags proved

Fig. 1. Salmon with tag attached to the tail.

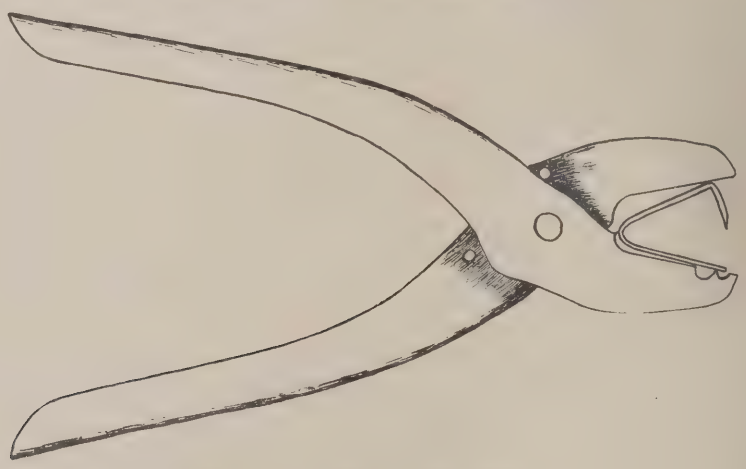


Fig. 2. Pliers used in tagging salmon.

too small for use at the base of the tail of spring salmon of 20 lb. or more in weight. In their case the tag was secured in the rays of the dorsal fin. The tags for use on large fish should be longer than those described and in no case should be placed so close to the flesh that sufficient space is not available for added growth.

The following statement gives the approximate weight and the number of each weight of fish tagged on the west coast of Vancouver Island:—

Weight. Lb.	No. of Fish.	Weight. Lb.	No. of Fish.
1– 9	330	30–39	72
10–19	498	40–49	11
20–29	206	50–58	8

Map 1. Showing points where spring salmon tagged off Barkley Sound, Vancouver Island, in 1925 were recaptured that year.

Of the 1,125 spring salmon tagged on the west coast of Vancouver Island, 70, or 6 per cent., were recaptured in 1925 and 43 in 1926, and the tags with their records returned to the Biological Board.

Of the 1,125 spring salmon, 10 were recaptured in British Columbia waters, 59 in United States waters, and 1 in the open sea. Of the 10 recaptured in British Columbia waters, 4 were caught in the Fraser River, 5 in Juan de Fuca Strait, and 1 in Barkley Sound.

Of the 59 recaptured in United States waters, 41 were taken from the Columbia River in Oregon, 11 in Puget Sound, and 2 in the Sacramento River in California. The points of recapture are shown on Map 1, page 17.

The following tabulation gives in detail the record of the recaptured salmon tagged on the west coast of Vancouver Island in 1925:—

Return of Spring Salmon tagged off Barkley Sound, Vancouver Island, 1925.

(The numbers are arranged according to date of tagging.)

Tag No.	Date tagged.	Date of Recapture.	Days free.	Place of Recapture.
		1925.		
5	May 23	Sept. —	100	Columbia River, 1 mile below mouth of Cowlitz.
58	,, 23	Aug. 1	69	Strait of Juan de Fuca, Sooke, V.I.
81	,, 30	,, 24	86	Puget Sound, Skagit Bay, Wash.
206	,, 30	July 9	40	Puget Sound, Swinomish Slough, Wash.
211	,, 30	No date	.....	Columbia River.
163	June 1	Sept. 10	101	Strait of Juan de Fuca, Pillar Rock, Wash.
405	,, 1	,, 19	110	Columbia River, Kalama River Hatchery.
239	,, 2	,, —	90	Columbia River, 1 mile below mouth of Cowlitz.
250	,, 2	Aug. 10	69	Columbia River, Warrendale.
253	,, 2	Sept. 16	106	Columbia River, Tongue Point, 20 miles from mouth.
256	,, 2	,, —	90	Columbia River, near Rainier.
258	,, 2	Oct. —	126	Columbia River, Kalama River Hatchery.
37	,, 4	July 23	49	Columbia River.
276	,, 4	,, 20	46	Strait of Juan de Fuca, Sooke, V.I.
505	,, 4	June 23	19	Columbia River, Puget Island.
508	,, 4	Sept. 30	118	Columbia River, Kalama River Hatchery.
536	,, 4	,, 17	105	Columbia River.
538	,, 4	June 24	20	Columbia River, Tongue Point.
607	,, 4	Aug. 12	69	Columbia River, North Fork.
628	,, 4	June 17	13	Puget Sound, Skagit River, North Fork.
632	,, 4	Sept. 10	98	Columbia River, St. Helens.
637	,, 4	July 28	54	Columbia River, Chinook.
657	,, 4	Sept. 12	100	Columbia River, Puget Island.
437	,, 6	,, 10	96	Sacramento River, Benicia, Cal.
544	,, 6	,, 28	114	Fraser River, Sunbury.
561	,, 6	,, 30	116	Columbia River, Kalama River Hatchery.
683	,, 6	,, 14	100	Willapa Harbour, Nasel River Hatchery, Wash.
694	,, 6	Aug. 18	73	Columbia River, mouth of Willamette.
905	,, 6	July 14	38	Columbia River, Astoria.
920	,, 6	,, 29	53	Strait of Juan de Fuca, Esquimalt, V.I.
923	,, 6	Nov. 12	159	Oregon, Alsea River.
581	,, 10	July 3	23	Puget Sound, Ebby Trap, Whidbey Island, Wash.
592	,, 10	Aug. 22	73	Columbia River, Astoria.
599	,, 10	July 25	45	Columbia River.
802	,, 10	July 31	51	Columbia River.
822	,, 10	Sept. 12	94	Columbia River, Wauna.
939	,, 10	June 18	8	Puget Sound, Salmon Bank, Wash.
945	,, 10	Aug. 17	68	Columbia River, mouth of Willamette.
949	,, 10	June 30	20	Fraser River, Steveston.
733	,, 11	Sept. 26	107	Columbia River, Little White Hatchery.
835	,, 11	Dec. 21	193	Green River Hatchery, Auburn, Wash.
837	,, 11	June 20	9	Off Long Beach, west of Barkley Sound (troll).
844	,, 11	July 23	42	Columbia River.
859	,, 11	Aug. 3	53	Columbia River.
459	Aug. 14	June —	.....	Off Cape Flattery (hook).
465	,, 14	July 6	22	Columbia River, Astoria.
472	,, 14	Aug. 29	76	Sacramento River, Pittsburg, Cal.

Return of Spring Salmon tagged off Barkley Sound, Vancouver Island, 1925—Continued.

Tag No.	Date tagged.	Date of Recapture.	Days free.	Place of Recapture.
		1925.		
743	Aug. 14	Sept. 14	92	Columbia River, Tongue Point.
754	„ 14	No date	.....	Oregon Coast.
758	„ 14	July 13	29	Puget Sound, Skagit River, Wash.
766	„ 14	Aug. 1	48	Columbia River, Altoona.
779	„ 14	July 18	34	Fraser River, Yale.
309	„ 16	Aug. 22	67	Columbia River.
317	„ 16	Sept. 8	84	Puget Sound, Port Townsend, Wash.
345	„ 16	„ 26	102	Strait of Juan de Fuca, Port Angeles, Wash.
358	„ 18	No date	.....	Columbia River.
596	„ 18	Aug. 7	50	Strait of Juan de Fuca, Sooke, V.I.
984	„ 18	„ 12	55	Columbia River, Altoona.
989	„ 18	Oct. 12	116	Washington Sound, San Juan Island, Wash.
1000	„ 18	Aug. 18	61	Strait of Juan de Fuca, Victoria, V.I.
365	„ 20	July 15	25	Columbia River, Puget Island.
358	„ 22	Aug. 17	56	Puget Sound, Deception Pass, Wash.
377	„ 22	Sept. 12	82	Columbia River, Skamokawa.
378	„ 22	„ 15	85	Columbia River, Astoria.
383	„ 22	No date	.....	Columbia River.
4031	„ 23	Sept. 15	84	Fraser River, mouth.
4222	„ 23	Aug. 20	58	Puget Sound, Salmon Bank, Wash.
4128	„ 24	June 24	.....	Off Barkley Sound; picked up dead.
4133	„ 24	Aug. 7	44	Columbia River, Puget Island.
4242	„ 24	„ —	37	Columbia River, Astoria.
4244	„ 25	Sept. 25	92	Columbia River, Little White Hatchery.

The Return of Tags of Salmon captured in 1926 that were tagged on the West Coast of Vancouver Island in 1925.

In addition to the above, some 43 of the fish tagged off the Vancouver Island coast in 1925 were recaptured in 1926.

Of that number, 27 were taken from the Columbia River in Oregon and 11 in British Columbia waters; only one of the latter being caught in the Fraser River.

From the fact that 68 of the 113 tags recovered from salmon tagged on the west coast of Vancouver Island were taken from the Columbia River, it would appear that the spring salmon from that great river commonly feed off the west coast of Vancouver Island and are subject to recapture there. The Department is indebted to Dr. W. A. Clemens for the following record of fish recaptured in 1926:—

1926 Return of Tags affixed to Spring Salmon off Ucluelet in 1925.

Tag No.	Date tagged.	Date caught.	Period out.	Place caught.
	1925.	1926.		
2	May 23	Sept. 20	1 year 117 days.....	North Island, Ore., Columbia River.
11	„ 23	April 28	11 months 5 days...	Swiftsure Bank.
33	June 4	Aug. 21	1 year 77 days.....	Bakers Bay, Columbia River.
50	May 26	Sept. 11	1 year 108 days.....	McGowan Trap, 15 miles up Columbia R.
78	„ 27	May 19	11 months 22 days.	Swiftsure Bank.
71	„ 27	Aug. 25	15 months.....	Off Ucluelet.
73	„ 27	„ 14	1 year 77 days.....	Chinook, Wash., Columbia River.
117	„ 27	May 14	11 months 17 days.	Ucluelet.
88	„ 30	Aug. 28	1 year 3 months.....	Bakers Bay, Columbia River.
121	„ 26	„ 3	1 year 67 days.....	Pillar Rock, Columbia River.
162	July 1	Oct. 2	1 year 2 months.....	Little White Salmon River Hatchery, Columbia River.

1926 Return of Tags affixed to Spring Salmon off Ucluelet in 1925—Continued.

Tag No.	Date tagged.	Date caught.	Period out.	Place caught.
	1925.	1926.		
181	June 4	June 9	1 year 5 days	Sooke Trap.
204	May 30	Aug. 18	1 year 78 days	Fish-reduction plant, Flarel, Columbia R.
212	,, 30	,, 7	1 year 69 days	McGowan, Columbia River.
230	June 2	,, 5	1 year 63 days	Westpoint, Ore., Columbia River.
216	May 30	July —	1 year 45 days	Sooke.
257	June 2	,, 2	1 year 1 month	Bakers Bay, Columbia River.
343	,, 16	Winter, 1925-26	6 months	Bakers Bay, Columbia River.
281	,, 4	Sept. 13	1 year 99 days	Hammond, Ore., Columbia River.
410	,, 1	Aug. 21	1 year 81 days	Dungeness Trap.
411	,, 1	July 6	1 year 35 days	Pillar Point Trap, Columbia River.
418	,, 1	May 15	11 months 14 days	20 miles off Ucluelet.
413	,, 1	Aug. 8	1 year 67 days	Astoria, Ore., Cannery, Columbia River.
531	,, 4	Feb. 26	9 months 22 days	Astoria, Ore., Cannery, Columbia River.
541	,, 6	Aug. 21	1 year 76 days	Astoria, Ore., Cannery, Columbia River.
642	,, 4	Oct. 5	1 year 123 days	Astoria, Ore., Cannery, Columbia River.

1926 Return of Tags affixed to Spring Salmon on West Coast of Vancouver Island in 1925.

Tag No.	Date tagged.	Date caught.	Period out.	Place caught.
	1925.	1926.		
654	June 4	May 16	11 months 12 days.	Off Ucluelet.
673	,, 6	Feb. 26	8 months 20 days	Columbia River.
740	,, 14	Winter, 1925-26	6 months	Columbia River.
760	,, 14	July 5	1 year 21 days	Columbia River.
765	,, 14	,, 18	1 year 34 days	3 miles S.W. of Quillahute River, Wash.
771	,, 14	Sept. 25	1 year 101 days	Chinook Cannery, Columbia River.
781	,, 14	,, 16	1 year 92 days	Chinook, Columbia River.
783	,, 14	July 9	1 year 25 days	Dungeness.
813	,, 10	,, 26	1 year 56 days	Eagle Cliff, Wash., Columbia River.
921	,, 6	Sept. 14	1 year 92 days	Chinook Trap, Columbia River.
928	,, 6	,, 8	1 year 86 days	Ewens Slough, Fraser River.
947	,, 17	Mar. 29	9 months 17 days	Off Ucluelet.
4105	,, 23	June —	1 year	Altoona, Wash., Columbia River.
4019	,, 18	April 14	9 months 26 days	Off Ucluelet.
4140	,, 24	,, 11	9 months	San Juan Island.
4170	,, 25	Aug. 15	13 months 20 days	Henry Island Trap.
4215	,, 23	May 1	10 months 8 days	Off Ucluelet.

Salmon-tagging Operations off Hippa Island, Queen Charlotte Island Group, in 1925.

In June and July, 1925, 274 spring salmon were tagged in the vicinity of Hippa Island, on the west coast of Graham Island, Queen Charlotte Group, of which 32, or 11 per cent., were recovered. Of the 32 recovered, 10 were taken in Provincial waters, 20 in the United States waters, and 1 in the open sea. Of the 10 secured from Provincial waters, 2 were taken from the Skeena River, 2 in Barkley Sound, 1 at Sooke, 1 in Boundary Bay, and 4 in the Fraser River; the fish from the Skeena and Fraser Rivers being recovered in July.

Of the 20 recaptured in United States waters, 19 were taken from water in or off the Oregon Coast, 7 of them being taken from the Columbia River proper; the southernmost point of recapture being the 4 taken in Coos Bay, Oregon, 870 miles south of the point of liberation. One of them made the journey in 60 days. The point of recapture of the fish tagged at Hippa Island is shown on Map 2, page 22. The following statement gives in detail the record from Hippa Island:—

Return of Spring Salmon tagged off Hippa Island, West Coast of Graham Island, Queen Charlotte Islands, 1925.

Tag No.	Date tagged.	Date of Recapture.	Days free.	Place of Recapture.
		1925.		
2103	June 19	Aug. 8	50	Fraser River, Sunbury.
2105	„ 19	July 24	35	Oregon, Tillamook Bay.
2110	„ 19	Oct. 29	132	Oregon, Nestucca River.
2013	„ 20	Sept. 27	99	Oregon, Siletz River.
2014	„ 20	Aug. 20	61	Puget Sound, Salmon Bank, Wash.
2117	„ 20	July 13	23	Skeena River, 20 miles from mouth.
2201	„ 20	Oct. 22	124	Columbia River, Clatskanie.
2202	„ 20	Sept. 21	93	Oregon, Coos Bay, Marshfield.
2128	„ 22	„ 4	74	Fraser River, Mount Lehman.
2133	„ 22	July 23	31	Columbia River.
2209	„ 22	Sept. 15	85	Barkley Sound, Alberni Canal, off Franklin Creek.
2212	„ 22	July 21	29	Columbia River.
2226	July 1	„ 24	23	Skeena River, Port Essington.
2140	„ 3	„ 22	19	Fraser River, Sunbury.
2144	„ 3	Aug. 14	42	Strait of Juan de Fuca, Sooke, V.I.
2164	„ 6	Sept. 3	59	Fraser River, Sunbury.
2239	„ 6	„ 23	79	Oregon, Nehalem River.
2243	„ 6	July 25	19	Columbia River, Sand Island.
2179	„ 15	Oct. 17	94	Oregon, Coos Bay, Marshfield.
2188	„ 16	July 15?	....	Off Hippa Island; picked up dead.
2197	„ 16	Sept. 21	67	Oregon, Coos Bay, Marshfield.
2034	„ 17	„ 12	57	Columbia River, 2 miles from Altoona.
2045	„ 19	„ 22	65	In ocean off Oregon Coast (troll).
2050	„ 19	Oct. 19	92	Oregon, Umpqua River.
2067	„ 19	No date	....	Columbia River.
2070	„ 19	Sept. 14	57	Columbia River, Wauna.
2073	„ 19	Oct. 10	83	Oregon, Umpqua River.
2096	„ 23	Nov. 8	108	Barkley Sound, Uchucklesit.
2098	„ 23	Sept. 21	60	Oregon, Coos Bay, Marshfield.
2251	„ 23	Oct. 9	78	Oregon, Alsea River.
2272	„ 24	„ 8	76	14 miles inside Gray's Harbour Bar, Wash.
2288	„ 25	Sept. 1	38	Boundary Bay, Strait of Georgia.

Tagging of Sockeye Salmon in 1925.

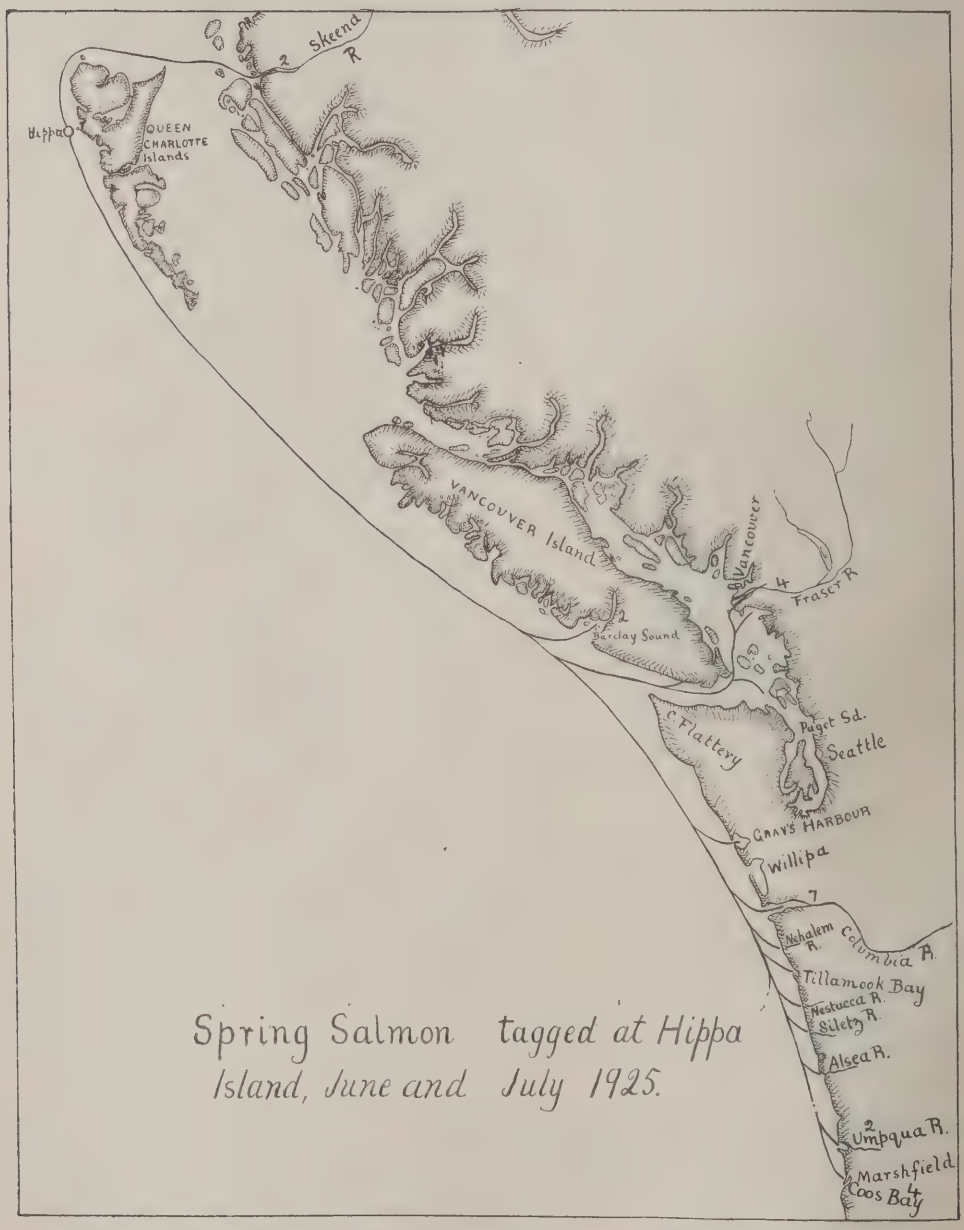
Six hundred and fifty-nine sockeye salmon (*O. nerka*) were tagged and liberated at Haystack Island, at the south of the mouth of Portland Canal, early in August, 1925.

Of the 659 tagged, 135, or 20 per cent., were recaptured in 1925; 80 of which were taken in the Nass River, 14 in waters leading to the Nass, 13 in the Skeena River, 27 in Alaska waters, and 1 in Union Passage, Grenville Channel, 50 miles south of the Skeena River. It is also interesting to note that tags were recovered from 2 sockeye that were caught at Onslow Island, Clarence Strait, Alaska, one day after being tagged and liberated, and that one was taken at Meziadin Falls, 100 miles above the mouth of the Nass, in the month of November.

All the sockeye tagged at Haystack Island were secured from traps. Map 3, page 24, shows the points of recapture.

The rate of travel exhibited by several of the sockeye tagged at Haystack Island is remarkable, as is shown in the following tabulations:—

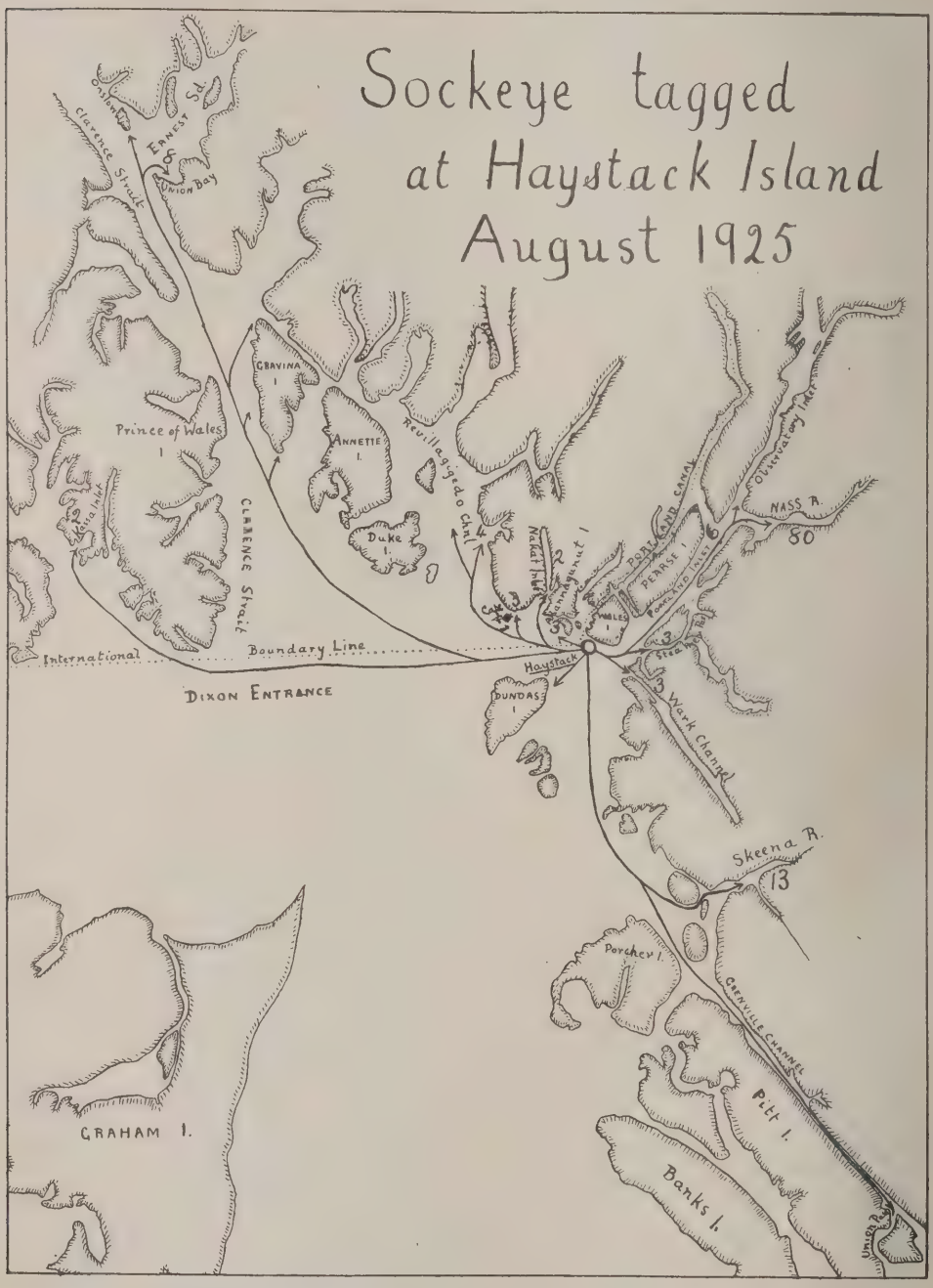
Tag No.	Date tagged.	Date of Recapture.	Distance travelled.	Time en route.	Rate of Travel.
			Miles.	Hours.	Miles per Hr.
2559	Aug. 12	Aug. 12	30	6	5
2933	„ 21	„ 22	100	24	4
2563	„ 12	„ 13	95	24	4
2623	„ 12	„ 13	95	24	4
2621	„ 12	„ 14	95	48	2



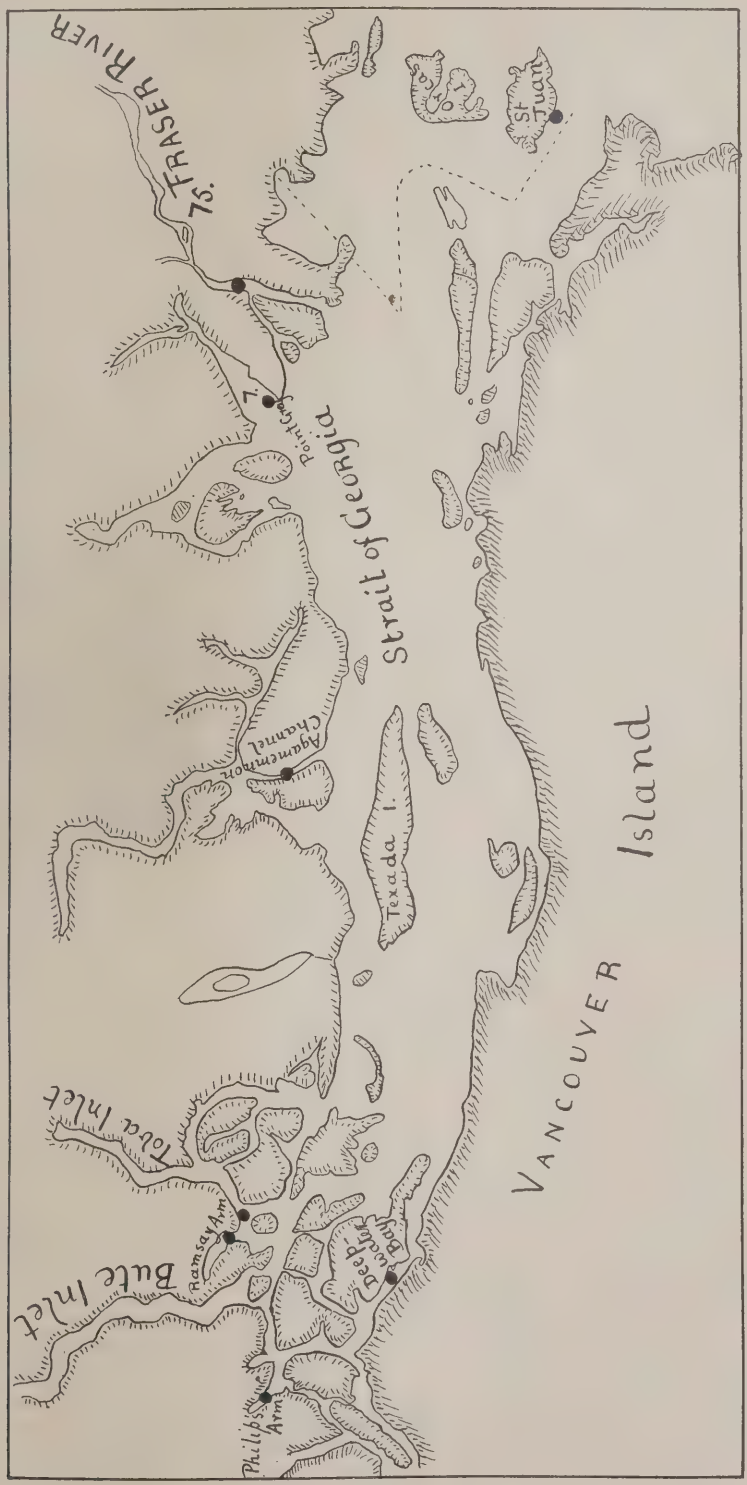
Map 2. Showing points where spring salmon tagged at Hippa Island were recaptured that year.

Returns of Sockeye Salmon tagged at Haystack Island Trap, August, 1925.

Tag No.	Date tagged.	Date of Recapture.	Days free.	Place of Recapture.
		1925.		
2300	Aug. 3	Aug. 8	5	Alaska, Gravina Island, Dall Head.
2301	,, 3	,, 21	18	Nass River.
2310	,, 3	,, 21	9	Portland Inlet.
2318	,, 3	,, 7	4	Nass River.
2319	,, 3	,, 7	4	Nass River, Kincolith Bar.
2320	,, 3	Sept. 22	50	Wark Canal, mouth of (troll).
2321	,, 3	Aug. 7	4	Nass River.
2326	,, 3	,, 5	2	Alaska, Revill Channel, Foggy Bay.
2328	,, 3	,, 13	10	Nass River, mouth of.
2331	,, 3	,, 18	15	Nass River.
2338	,, 3	,, 5	2	Alaska, Revill Channel, Foggy Bay.
2348	,, 3	,, 7	4	Nass River, Kincolith Bar.
2350	,, 3	,, 4	1	Nass River.
2352	,, 5	,, 18	13	Nass River.
2371	,, 5	,, 28	24	Skeena River, 4 miles north of Hazelton.
2376	,, 5	,, 14	9	Alaska, Ernest Sound, Union Bay.
2385	,, 5	,, 13	8	Portland Inlet.
2387	,, 5	,, 12	7	Nass River, Kincolith Bar.
2390	,, 5	,, 6	1	Alaska, Revill Channel, Slate Island.
2392	,, 5	,, 14	9	Nass River, Kincolith Bar.
2393	,, 5	,, 10	5	Alaska, Cape Fox, Dixon Entrance.
2396	,, 5	,, 14	9	Alaska, Ernest Sound, Union Bay.
2406	,, 5	,, 12	7	Skeena River.
2410	,, 5	,, 14	9	Nass River, Leading Point.
2412	,, 5	,, 14	9	Nass River, mouth of.
2431	,, 5	,, 8	3	Alaska, Revill Channel, Foggy Bay.
2433	,, 5	,, 12	7	Nass River, Mouth Point.
2382	,, 5	,, 14	7	Alaska, Ernest Sound, Union Bay.
2386	,, 5	,, 14	7	Nass River.
2439	,, 5	,, 17	10	Nass River, Leading Point.
2440	,, 5	,, 10	3	Nass River.
2444	,, 5	,, 18	11	Nass River.
2446	,, 5	,, 14	7	Nass River, Portland Inlet.
2448	,, 5	,, 11	4	Nass River, Kincolith Bar.
2454	,, 5	,, 11	4	Nass River.
2460	,, 7	,, 14	7	Nass River.
2461	,, 7	,, 10	3	Nass River.
2465	,, 7	,, 11	4	Portland Inlet.
2468	,, 7	,, 6?	....	Portland Inlet.
2469	,, 7	,, 10	3	Alaska, Cape Fox, Dixon Entrance.
2471	,, 7	,, 12	5	Nass River, Mouth Point.
2476	,, 7	,, 14	7	Observatory Inlet, mouth of.
2481	,, 7	,, 13	6	Alaska, Ernest Sound, Union Bay.
2485	,, 7	Sept. 25	49	Wark Canal, mouth of (troll).
2486	,, 7	Aug. 17	10	Nass River, Leading Point.
2488	,, 7	,, 12	5	Nass River, Mouth Point.
2491	,, 7	,, 14	7	Nass River, Leading Point.
2499	,, 7	,, 10	3	Nass River.
2500	,, 7	,, 10	3	Portland Inlet, Steamer Passage.
2508	,, 7	,, 18	11	Nass River.
2510	,, 7	,, 13	6	Skeena River.
2513	,, 7	,, 10	3	Skeena River, mouth of.
2514	,, 10	,, 13	3	Nass River, Kincolith Bar.
2521	,, 10	,, 12	2	Nass River.
2530	,, 10	,, 14	4	Nass River, Portland Inlet.
2534	,, 10	,, 12	2	Nass River, Kincolith Bar.
2539	,, 10	,, 20	10	Skeena River.
2545	,, 10	,, 14	4	Nass River.
2548	,, 10	Sept. 14	35	Skeena River, Hazelton.
2551	,, 7	Aug. 14	4	Nass River, Kincolith Bar.
2553	,, 12	,, 16	4	Alaska, Revill Channel, Foggy Bay.
2559	,, 12	,, 12	0	Nass River.
2562	,, 12	,, 10?	....	Portland Inlet, Steamer Passage.



Map 3. Showing points where sockeye salmon tagged at Haystack Island in 1925 were recaptured that year.



Map 4. Showing points where sockeye salmon tagged at Deepwater Bay in 1925 were recaptured that year.

Returns of Sockeye Salmon tagged at Haystack Island Trap, August, 1925—Continued.

Tag No.	Date tagged.	Date of Recapture.	Days free.	Place of Recapture.
		1925.		
2563	Aug. 12	Aug. 13	1	Alaska, Ernest Sound, Union Bay.
2570	,, 12	,, 14	2	Nass River.
2574	,, 12	Sept. 20	39	Dundas Island, Dixon Entrance (troll).
2589	,, 12	Aug. 23	11	Grenville Channel, Union Passage.
2591	,, 12	,, 17	7	Skeena River, Port Essington.
2595	,, 12	,, 17	5	Nass River, near Point.
2597	,, 12	,, 20	8	Skeena River.
2606	,, 12	,, 17	5	Nass River, near Point.
2609	,, 12	,, 10?	....	Portland Inlet, Steamer Passage.
2619	,, 12	,, 13	1	Alaska, Cape Fox, Dixon Entrance.
2621	,, 12	,, 14	2	Alaska, Ernest Sound, Union Bay.
2623	,, 12	,, 13	1	Alaska, Ernest Sound, Union Bay.
2625	,, 12	,, 17	5	Alaska, Kanagunut Island.
2627	,, 12	,, 16	4	Alaska, Gravina Island, Seal Cove.
2629	,, 12	,, 17	5	Alaska, Kanagunut Island.
2602	,, 14	,, 8?	....	Alaska, Gravina Island, Vallenar Bay.
2604	,, 14	,, 18	4	Nass River.
2617	,, 14	,, 17	3	Nass River.
2631	,, 14	,, 19	5	Nass River.
2642	,, 14	,, 16	2	Nass River.
2650	,, 14	,, 21	7	Nass River.
2654	,, 14	Sept. 23	40	Wark Canal (troll).
2655	,, 14	Aug. 17	3	Portland Inlet.
2659	,, 14	,, 20	6	Skeena River.
2663	,, 14	,, 7?	....	Nass River, mouth of.
2664	,, 14	,, 17	3	Alaska, Kanagunut Island.
2665	,, 14	,, 19	5	Nass River.
2668	,, 14	,, 13?	....	Alaska, Ernest Sound, Union Bay.
2671	,, 14	,, 21	7	Nass River, Kincolith Bar.
2675	,, 14	,, 17	3	Nass River, near Point.
2682	,, 14	,, 17	3	Nass River, Kincolith Bar.
2700	,, 14	,, 17	3	Nass River, Leading Point.
2710	,, 14	Nov. 15	93	Nass River, Meziadin Falls.
2712	,, 14	Aug. 21	7	Nass River, Kincolith Bar.
2715	,, 14	,, 17	3	Nass River, near Point.
2716	,, 14	,, 16	2	Skeena River.
2718	,, 14	,, 18	4	Nass River.
2719	,, 14	,, 21	7	Nass River, Leading Point.
2720	,, 14	,, 17	3	Nass River.
2724	,, 14	,, 19	5	Nass River.
2728	,, 14	,, 18	4	Portland Inlet.
2734	,, 14	Sept. 20	37	Skeena River, Babine Lake.
2736	,, 14	Aug. 21	7	Nass River.
2739	,, 14	,, 16	2	Alaska, Nakat Bay.
2740	,, 14	,, 26	12	Nass River, Aiyansh.
2743	,, 17	,, 19	2	Nass River.
2746	,, 17	,, 21	4	Nass River.
2751	,, 17	,, 20	3	Nass River, Leading Point.
2752	,, 17	Sept. 8	22	Nass River, Leading Point.
2755	,, 17	Aug. 20	3	Nass River.
2768	,, 17	,, 21	4	Nass River.
2775	,, 17	,, 21	4	Nass River.
2780	,, 17	,, 20	3	Alaska, Prince of Wales Island, Kassa Inlet.
2785	,, 17	,, 28	11	Nass River, Leading Point.
2797	,, 17	,, 20	3	Nass River.
2855	,, 17	,, 19	2	Nass River.
2858	,, 17	,, 18	1	Alaska, Nakat Bay.
2860	,, 17	,, 21	4	Nass River, Kincolith Bar.
2866	,, 17	,, 21	4	Nass River, Kincolith Bar.
2875	,, 14	,, 21	4	Nass River.
2881	,, 14	,, 20	3	Alaska, Prince of Wales Island, Kassa Inlet.
2884	,, 14	,, 28	11	Nass River, Leading Point.
2888	,, 14	,, 21	4	Nass River.
2895	,, 14	,, 19	2	Skeena River, mouth of (off Rachail Island).

Returns of Sockeye Salmon tagged at Haystack Island Trap, August, 1925—Continued.

Tag No.	Date tagged.	Date of Recapture.	Days free.	Place of Recapture.
		1925.		
2817	Aug. 19	Aug. 24	5	Nass River, Leading Point.
2803	„ 19	„ 28	9	Nass River, Leading Point.
2820	„ 19	„ 21	2	Nass River.
2825	„ 19	Sept. 14	26	Skeena River, Hazelton.
2822	„ 19	Aug. 20	1	Nass River.
2930	„ 21	„ 31	10	Nass River.
2933	„ 21	„ 22	1	Alaska, Clarence Straits, Onslow Island.
2936	„ 21	„ 28	7	Nass River.

RESULTS OF SOCKEYE-TAGGING AT DEEPWATER BAY, SEYMOUR NARROWS, IN 1925.

Between August 7th and 14th, 1925, 519 sockeye salmon taken from purse-nets were tagged and liberated at Deepwater Bay, Seymour Narrows, of which 107, or 20 per cent., were recaptured.

Of the 107 recaptured, all but one were taken in Provincial waters, mainly in the Fraser. The one exception noted was taken on September 25th, off the east shore of Whidbey Island, Washington.

Of the 107 retaken, 90 were recaught in August, 17 in September, and 1 in October.

The tagging of sockeye at Deepwater Bay in 1925 confirms the findings of Dr. Gilbert, in his report for 1915, that a portion of the sockeye runs to the Fraser reached there from the north.

THE HALIBUT INVESTIGATION.

The investigation of the life-history of the Pacific halibut and the condition of that fishery in the North Pacific, which is being conducted by the International Fisheries Commission, created by the Halibut Treaty between Canada and the United States, made progress during the year. The Commission's staff during the summer and fall was engaged largely in tagging halibut and obtaining data from the banks off the Oregon Coast to the Shumagin Island, Alaska. Fishing was conducted in the usual commercial way by the "Scandia," one of the largest halibut-fishing vessels in the Pacific fleet, which was under charter to the Commission for much of the year. The halibut caught which were not seriously injured were tagged and released. Those too seriously injured to survive were retained and, after examination for racial characteristics, age, etc., were cleaned, iced, landed, and sold in the regulation manner. Since tagging operations were begun in 1925 over 8,000 fish have been tagged and released. Of the fish tagged, some 800 have been recaptured and the tags returned to the Commission.

The primary work of the Commission on the "Scandia" has been to obtain data as to the existence or non-existence of distinct differences in the halibut on various banks—to determine whether the fish are homogenous or more or less distinct races; to determine if there are significant body proportions and differences in anatomical structure and variations in the time of spawning and age at maturity.

Some progress has also been made in the study of propagation. Several types of tow-nets, young-fish trawls, and hydrographic instruments were used in the effort to solve some of the problems—the location of the spawning-banks, location and depth at which eggs, larvæ, and newly hatched fish may be obtained; in other words, their environment and in what way the water-currents are likely to affect the drift of eggs and young fish, as drift is important to determine isolation. To determine the age and rate of growth of fish in widely scattered banks a considerable amount of data has been collected from a large number of fish. More than 15,000 scales and ear-bones, by which rate of growth and age is established, have been assembled.

In addition to the data as to age, rate of growth, racial characteristics, migration, and propagation, much progress has been made in other features of the Commission's work. Complete records of the halibut landed on the coast since 1914 have been made, with records showing the catches per unit of gear—per skate. Enough data have been obtained to show the catch per skate for many years on many banks. The records from the banks in Hecate Strait show that in the last twenty years the average catch per skate has dropped from 477 lb. in 1907 to 45 lb.

in 1926. It forcefully shows the depletion that has taken place on Hecate banks. All other known long-fished banks show a similar rate of decrease. The present supply is being maintained by resorting to newly discovered and far-distant banks; by more intense fishing on depleted banks; and by the use of smaller hooks—by the catching of an increased number of young fish. The outstanding feature of this part of the work, like that previously conducted by the Provincial Government, is the establishment of depletion.

The work is still being directed to ascertain what steps, if any, can be taken to arrest depletion, and as the work progresses new questions are presented for solution. Take, for instance, the question of protecting the young rather than the adult. There are great fisheries which flourish on the capture of the young fish only, and there are more which depend entirely upon adults. Possibly because of the fact that more fisheries depend upon the catching of adults, there is a popular tendency to deprecate the catching of the young. Yet, as Mr. W. F. Thompson, the Commission's Director of Investigations, has pointed out, it is a fact that in most fisheries the toll taken by man from the young of any species is but a minute fraction of that taken by other enemies—that a great proportion of the young which could in many cases be taken by man will later be consumed by natural enemies alone. That being the case, why not take the young? On the other hand, even though an adult survives many perils to arrive at spawning size, it has increased greatly in bulk, so that it might pay to protect the young and profit by the increase in weight. Picture, as Mr. Thompson has done, a fisherman with a young fish he has taken asking himself whether, if he throws it back into the water, it might not return to his nets a year or more later many times larger, but pausing when he saw the many enemies awaiting the return of the young fish to their reach. Would he have to return twenty young fish to get one large one back? Would that be good business? In which case would the fishermen destroy the most spawners? The present knowledge is of so little value in comparing the rate of mortality with rate of growth that this question cannot be determined. Only close study and experience can demonstrate the way to administer a great marine fishery. A fundamental difficulty at present is that it is not known what balance should be maintained between young and old—between spawners and non-spawners. Such questions can only be determined by skilfully framed and continuous experiments. The adequacy and efficiency of regulations must await the results of their application.

APPENDICES.

CONTRIBUTIONS TO THE LIFE-HISTORY OF THE SOCKEYE SALMON. (No. 12.)

By Wilbert A. Clemens, Ph.D., Director, Pacific Biological Station, Nanaimo, and Lucy S. Clemens, Ph.D.

1. THE FRASER RIVER SOCKEYE RUN OF 1926.

The total pack from the run to the Fraser River amounted to 130,362 cases, of which 85,689 were packed in the Province of British Columbia and 44,673 cases in the State of Washington. The extent of the run and the size of the pack was above expectancy, due to the appearance of a large late run in September, the bulk of the escapement of which proceeded to Shuswap Lake (Little River and Adams River) to spawn. The distribution of the pack is interesting in that the British Columbia pack exceeded that of the Washington by 41,016 cases. This circumstance is apparently partly the result of the failure of the American fishermen to intercept the late run. There has been much conjecture as to the origin of this late portion of the run. It is apparent that before extraordinary explanations are resorted to all available data should be studied to see if the run cannot be accounted for in the natural course of events. In this connection it is interesting to note that in 1922 the British Columbia pack exceeded that of the Washington by slightly over 3,000 cases. In only one other year since 1910 has there been a similar occurrence—namely, in 1915, when the Canadian pack exceeded the American by 26,000 cases. (Table I.) In 1922 there was a late run which went to the Shuswap area, as Fishery Officer Shotton reported in that year that the run to that area surpassed any of the previous eight years. The following quotations from the report of Mr. Shotton are given with the permission of Major Motherwell, Chief Inspector of Fisheries, Vancouver: "The run of sockeye was exceptionally good, there being two runs. The first run of sockeye were the larger fish many of which went to the spawning areas in the Adams River. The smaller sockeye, which followed closely, were also numerous; in fact, too numerous to mention numbers. I used every endeavour to get some one of authority to estimate the number of sockeye in the Little River, but they only smiled, saying it was almost impossible. I am taking a very conservative estimate when I state that some six to eight thousand had been seen in the Little River."

It might be expected that the weekly pack records would show a late run in 1922, but this is not the case, as may be seen in Table II., which is given with the permission of Major Motherwell. The occurrence of the late run in 1926 is clearly indicated in the figures for October 2nd, 1926, but there is no corresponding large pack in 1922. Since the sockeye-fishing season ends in the Fraser River on September 30th, it may be that the Shuswap run entered the river after that date. Mr. Shotton states that in 1922 two runs of sockeye appeared in Adams River—one on October 6th, which was light, and another, on October 25th, which was heavy. In 1926 the run arrived in the Fraser River on September 27th and had reached Adams River about October 20th. If, therefore, the run of 1922 was five days later than the run in 1926, it must have come in after the close of the sockeye-fishing season and so did not leave a record in the figures of the pack.

It will be noted that Mr. Shotton states that a very conservative estimate of the number of sockeye in Little River in 1922 would be 8,000. This without doubt was a very conservative estimate, for that number scattered in a stream such as Little River would not be very impressive. Mr. Babcock states that Mr. Shotton believes there were no less than 20,000 sockeye in Adams River in 1922. There would thus be a total of at least 28,000 spawning fish in the two rivers, which would mean a deposition of over 50,000,000 eggs. Mr. Babcock has estimated the number of fish on the spawning-beds in these rivers in 1926 as between 300,000 and 400,000. Obviously such a return could scarcely have resulted from the spawning of 28,000 fish, but since the latter estimate is a very conservative one there can be no doubt but that at least the great bulk of them did.

In March, 1923, a planting of 1,176,000 eyed sockeye-eggs was made in Eagle River, a tributary of Upper Shuswap Lake. It has been suggested that possibly the return from this planting accounted for the run of 1926 to Adams River and Little River, but since this planting was at best less than 3 per cent. of the natural deposition it is apparent that the return could have formed but a very small part of the run, even though it might have gone there instead of to Eagle River.

Since the run to the Fraser is composed predominately of four-year-old fish, the bulk of the 1926 fish were undoubtedly descendants of the 1910–14–18–22 cycle. The figures in Table I. show that in the early years the runs of this cycle were very large, approximating those of the big cycle; that is, the 1909–13–17–21–25 series. The former cycle is the only one showing a decided tendency toward recuperation and this recovery is largely the result of the development of this late run to Shuswap Lake. The significance lies in the apparent fact that a remnant of an up-river race is building itself up into a large run. It is indicative of the recuperative possibilities of the Fraser and of the possible lines of procedure which may profitably be followed in attempting to assist in the rehabilitation of the upper river.

The sockeye coming to the Fraser River in 1927 should be the descendants of the 1923 run, which produced the second smallest pack in the history of the Fraser. Moreover, the 1911–15–19–23 cycle has shown a very decided decline, as shown in Table I. Mr. Babcock's report of inspection of the spawning-beds in 1923 indicates that very few sockeye reached the areas above Hell's Gate, except the Shuswap area, where a few thousand spawned late in the season. Table II. indicates that there was a small late run in 1923. Although 6,176,000 eggs collected from the Lower Fraser run of 1923 were planted in the Upper Fraser, it is evident that the returns from this under the best of conditions cannot be great. Thus, in the ordinary course of events, the sockeye-pack of 1927 will depend upon the extent of the run to the Lower Fraser and a very large run cannot be anticipated.

The material for this year's study consisted of data and scales from 1,124 sockeye salmon selected at random from April 27th to August 30th in forty-three samplings.

(1.) The One-year-in-lake Type.

This type was the predominant one in the Fraser River run, as usual, being represented by 995 individuals, or 89 per cent. of the total of 1,124. The proportions of the three classes were as follows: Three years of age, 24, or 2 per cent.; four years of age, 743, or 75 per cent.; and five years of age, 228, or 23 per cent. The four-year-old one-year-in-lake fish thus continue to form the bulk of the run, accounting for 66 per cent. of the total.

Tables III. and IV. give the lengths and weights of the four- and five-year specimens of the one-year-in-lake type in the collection.

It will be noted that the numbers of the males were slightly in excess of those of the females, there being 496 of the former and 475 of the latter. In the previous year the reverse was the case.

The average lengths of the four-year-old males and females is the lowest on record. The decrease is astonishing, being almost 1 inch in the case of the males and ½ inch in the case of the females, as compared with the figures of last year, when a low record was established. (*See* Table V.) It will be seen that during the last eight years there has been a decrease in average length of 1½ inches in the case of the males and at least ½ inch in the case of the females. That this decrease in size has taken place in the cycles is shown in the following table for the 1926–1922–1918 cycle:—

Average length, 1918: Males, 24.9 inches; females, 23.8 inches.
Average length, 1922: Males, 24.0 inches; females, 23.0 inches.
Average length, 1926: Males, 22.6 inches; females, 22.3 inches.

With the decrease in length there has also been a decrease in average weight. The average weights in 1926 for the four-year-old males were 5.2 lb. and for the females 4.9 lb., which are the lowest on record.

Similar decreases have taken place among the five-year-old one-year-in-lake fish, as illustrated by the following:—

Average length, 1916: Males, 26.8 inches; females, 25.5 inches.
Average length, 1921: Males, 25.7 inches; females, 24.6 inches.
Average length, 1926: Males, 24.6 inches; females, 24.0 inches.

It is apparent that the larger individuals of the various races or the races of larger individuals are decreasing in numbers either through the selective action of fishing operations or through natural causes. There can be little doubt but that fishing operations are responsible and that we have here an indication of great strain being put upon the stock. There can be no question as to the reliability of the figures, since all the material has been collected at the traps at Sooke and the methods of sampling and measurement have been uniform throughout the years. We are dealing here, of course, only with those fish which have appeared off the southern end of Vancouver Island up to about the end of the first week in September, and so not with those fish which have appeared later and formed such runs as went to Shuswap Lake this year or in 1922. The late run of this year reached the Fraser River about September 28th.

The grilse, three-year-old one-year-in-lake fish, were relatively few in numbers, forming a total of twenty-four, of which five were females. The data concerning the grilse are given in Tables VI. and VII.

(2.) The Two-years-in-lake Type.

This group does not form a large component of the Fraser River fish. In 1926 there were but seventy-nine individuals in the total collection, distributed as follows: Three individuals four years of age, fifty-eight individuals five years of age, and eighteen individuals six years of age. (*See* Tables VI., VII., VIII., and IX.) As has been pointed out by Dr. Gilbert, the additional year in the lake does not add appreciably to the adult length or weight.

(3.) The Sea-type.

The individuals of this type were not numerous in the run of 1926, there being 22 three years of age and 28 four years of age. The average of the previous six years was 33 of the former and 35 of the latter. The following figures give the number of individuals of this type in the runs 1920 to 1926:—

	Three Years old.	Four Years old.
1920	36	17
1921	6	22
1922	54	48
1923	64	94
1924	8	30
1925	27	....
1926	22	28

It will be seen that the type was abundantly represented in 1922 and 1923 and should thus have been well represented in 1926.

The data concerning lengths and weights are given in Tables X. and XI. It should be pointed out that in this year the sea-type exceed in both average length and average weight the corresponding one-year-in-lake type. That is, the average lengths of the four-year-old one-year-in-lake males and females are 22.6 and 22.3 inches respectively, while the average lengths of the three-year-old males and females of the sea-going type are 23.4 and 22.5 inches respectively.

Table I.—Fraser River Packs, 1910–26, arranged in accordance with the Four-year Cycle.

B.C.	1910—	150,432	1914—	198,183	1918—	19,697	1922—	51,832	1926— 85,689
Wash.		248,014		335,230		50,723		48,566	44,673
Total		398,446		533,413		70,420		100,398	130,362
B.C.	1911—	58,487	1915—	91,130	1919—	38,854	1923—	31,655	
Wash.		127,761		64,584		64,346		47,402	
Total		186,248		155,714		103,200		79,057	
B.C.	1912—	123,879	1916—	32,146	1920—	48,399	1924—	39,743	
Wash.		184,680		84,637		62,654		69,369	
Total		308,559		116,783		111,053		109,112	
B.C.	1913—	719,796	1917—	148,164	1921—	39,631	1925—	35,385	
Wash.		1,673,099		411,538		102,967		112,023	
Total		2,392,895		559,702		142,598		147,408	

Table II.—Comparative Statement of Packs of Sockeye, Fraser River District, 1922–26.

1922.		1923.		1924.		1925.		1926.	
Date.	No. of Cases.	Date.	No. of Cases.	Date.	No. of Cases.	Date.	No. of Cases.	Date.	No. of Cases.
----------	-------	----------	-------	----------	-------	July 4	92	July 10	58
July 15	23	----------	-------	----------	-------	,, 11	928	,, 17	881
,, 22	353	July 21	81	July 19	337	,, 18	756	,, 24	1,695
,, 29	4,030	,, 28	1,001	,, 26	2,540	,, 25	4,167	,, 31	2,148
Aug. 5	5,155	Aug. 4	2,020	Aug. 2	5,921	Aug. 1	5,633	Aug. 7	2,136
,, 12	7,536	,, 11	3,980	,, 9	5,839	,, 8	7,257	,, 14	8,795
,, 19	6,509	,, 18	5,515	,, 16	4,549	,, 15	2,736	,, 21	7,541
,, 26	7,949	,, 25	3,432	,, 23	6,476	,, 22	2,516	,, 28	5,144
Sept. 2	7,025	Sept. 1	2,910	,, 30	5,262	,, 29	1,676	Sept. 4	3,469
,, 9	832	,, 8	1,177	Sept. 6	995	Sept. 5	1,674	,, 11	5,933
,, 16	3,932	,, 15	4,225	,, 13	475	,, 12	1,218	,, 18	9,169
,, 23	3,079	,, 22	873	,, 20	172	,, 19	889	,, 25	6,410
,, 30	701	,, 29	2,322	,, 27	306	,, 26	670	Oct. 2	24,148
Oct. 7	429	Oct. 6	753	Oct. 4	212	Oct. 3	500	,, 9	5,680
----------	-------	,, 13	635	,, 11	66	,, 10	3	----------	-------

Table III.—Fraser River Sockeyes, One Year in Lake, 1926, from Vancouver Island Traps, grouped by Age, Sex, and Length.

Length in Inches.	Number of Individuals.				Total.
	Four Years old.		Five Years old.		
	Males.	Females.	Males.	Females.	
18	2	3	----	----	5
18½	7	4	----	1	12
19	17	12	----	----	29
19½	24	24	----	1	49
20	29	30	----	----	59
20½	33	24	1	1	59
21	23	14	2	2	41
21½	17	12	1	4	34
22	13	28	5	2	48
22½	13	23	7	7	50
23	22	38	6	13	79
23½	27	45	7	11	90
24	31	53	8	24	116
24½	45	31	17	11	104
25	40	12	19	19	90
25½	24	2	11	11	48
26	13	1	16	9	39
26½	6	----	6	2	14
27	----	----	2	----	2
27½	----	1	1	----	2
28	----	----	1	----	1
Totals	386	357	110	118	971
Average lengths	22.6	22.3	24.6	24.0	-----

Table IV.—Fraser River Sockeyes, One Year in Lake, 1926, from Vancouver Island Traps, grouped by Age, Sex, and Weight.

Weight in Pounds.	Number of Individuals.				Total.
	Four Years old.		Five Years old.		
	Males.	Females.	Males.	Females.	
2	....	2	....	....	2
2½	5	5	....	1	11
3	46	46	....	1	93
3½	46	36	1	2	85
4	47	41	7	4	99
4½	25	41	10	13	89
5	41	30	8	18	97
5½	32	34	5	13	84
6	28	56	19	30	133
6½	23	29	18	22	92
7	36	27	23	10	96
7½	23	6	8	4	41
8	20	3	8	....	31
8½	4	....	1	....	5
9	6	1	....	....	7
9½	4	....	2	....	6
Totals	386	357	110	118	971
Average weights	5.2	4.9	6.2	5.7	.....

Table V.—Average Lengths, Fraser River Sockeyes, Four Years old, One Year in Lake, for a Term of Years.

	Males.	Females.
Average lengths for five years prior to 1919	25.0	24.1
Lengths in 1919	24.1	22.8
Lengths in 1920	24.1	23.2
Lengths in 1921	23.7	23.0
Lengths in 1922	24.0	23.0
Lengths in 1923	24.3	23.3
Lengths in 1924	23.8	22.8
Lengths in 1925	23.5	22.9
Lengths in 1926	22.6	22.3

Table VI.—Fraser River Sockeyes, Grilse, 1926, from Vancouver Island Traps, grouped by Age, Sex, and Length.

Length in Inches.	One Year in Lake, Three Years old.		Two Years in Lake, Four Years old.	
	Males.	Females.	Males.	Females.
17½	2	....	....	....
18	....	....	....	....
18½	1	2	....	....
19	3	....	....	....
19½	4	1	....	....
20	4	2	....	....
20½	2	....	1	....
21	1	....	....	....
21½	1	....	1	....
22	1	....	....	1
Totals	19	5	2	1
Average lengths	19.7	19.3	21.0	22.0

Table VII.—Fraser River Sockeyes, Grilse, 1926, from Vancouver Island Traps, grouped by Age, Sex, and Weight.

Weight in Pounds.	One Year in Lake, Three Years old.		Two Years in Lake, Four Years old.	
	Males.	Females.	Males.	Females.
2	1	....	....	....
2½	1	....	....	....
3	4	3	....	....
3½	5	1	....	....
4	4	1	1	....
4½	4	....	1	....
5	....	....	....	1
Totals	19	5	2	1
Average weights	3.6	3.3	4.2	5.0

Table VIII.—Fraser River Sockeyes, Two Years in Lake, 1926, from Vancouver Island Traps, grouped by Age, Sex, and Length.

Length in Inches.	Number of Individuals.			
	Five Years old.		Six Years old.	
	Males.	Females.	Males.	Females.
18	....	1	....	....
18½	....	....	....	....
19	....	1	....	....
19½	3	2	....	....
20	1	3	....	....
20½	2	1	....	....
21	....	....	....	....
21½	1	1	....	1
22	1	1	....	2
22½	....	3	....	2
23	....	2	....	....
23½	7	7	....	1
24	6	2	....	....
24½	4	4	2	4
25	1	....	....	2
25½	2	1	....	....
26	1	....	2	....
26½	....	....	1	1
Totals	29	29	5	13
Average lengths	23.2	22.4	25.5	23.7

Table IX.—Fraser River Sockeyes, Two Years in Lake, 1926, from Vancouver Island Traps, grouped by Age, Sex, and Weight.

Weight in Pounds.	Number of Individuals.			
	Five Years old.		Six Years old.	
	Males.	Females.	Males.	Females.
2½	1	....	....	....
3	2	4	....	....
3½	4	4	....	....
4	....	3	....	1
4½	1	2	....	4
5	3	3	....	....
5½	5	5	....	1
6	6	4	1	2
6½	3	2	....	2
7	2	2	1	2
7½	....	....	1	....
8	3	....	1	1
8½	....	....	1	....
Totals	29	29	5	13
Average weights	5.4	4.8	7.4	5.7

Table X.—Fraser River Sockeyes, Sea-type, 1926, from Vancouver Island Traps, grouped by Age, Sex, and Length.

Length in Inches.	Number of Individuals.			
	Three Years old.		Four Years old.	
	Males.	Females.	Males.	Females.
22	....	3	....	1
22½	1	3	....	....
23	5	3	....	....
23½	4	....	....	3
24	2	....	1	3
24½	1	....	1	4
25	....	....	....	4
25½	....	....	3	3
26	....	....	3	2
Totals	13	9	8	20
Average lengths	23.4	22.5	25.4	24.6

Table XI.—Fraser River Sockeyes, Sea-type, 1926, from Vancouver Island Traps, grouped by Age, Sex, and Weight.

Weight in Pounds.	Number of Individuals.			
	Three Years old.		Four Years old.	
	Males.	Females.	Males.	Females.
4	....	....	....	1
4½	....	1	....	....
5	2	3	1	1
5½	1	3	....	1
6	4	....	....	3
6½	4	2	1	6
7	2	....	2	3
7½	....	....	....	2
8	....	....	3	2
8½	....	....	1	1
Totals	13	9	8	20
Average weights	6.1	5.4	7.3	6.6

2. THE RIVERS INLET SOCKEYE RUN OF 1926.

(1.) General Characteristics.

The 1926 pack for Rivers Inlet amounted to 65,581 cases. This falls in line with the 1911–16–21–26 series and is a fair pack for that series. Sixty per cent. of the run consisted of four-year-old fish and were thus no doubt derived from the 1922 spawning, when the run consisted of 82 per cent. of four-year-old individuals. Forty per cent. of the run consisted of five-year-old fish derived from the 1921 spawning, when the run consisted of 51 per cent. of five-year-old individuals. (Table XII.)

In the report on the run of 1925 it was stated that the pack figures seemed to further confirm the opinion that there is a five-year cycle in Rivers Inlet. (Table XIII.) While this is true and while the five-year-old fish appear to be the dominant factor in the runs, the occurrence of varying numbers of four-year-old fish makes prediction rather difficult. The five-year group is a fairly uniform one, as may be seen when the percentages of the numbers of these fish in the runs are arranged in the five-year cycles, as follows:—

	Per Cent.		Per Cent.		Per Cent.
1912	79	1917	67	1922	18
1913	20	1918	43	1923	24
1914	65	1919	54	1924	56
1915	87	1920	95	1925	77
1916	76	1921	51	1926	40

On the other hand, the four-year-old group shows great fluctuations:—

	Per Cent.		Per Cent.		Per Cent.		Per Cent.
1912	21	1916	24	1920	5	1924	44
1913	80	1917	33	1921	49	1925	23
1914	35	1918	57	1922	82	1926	60
1915	13	1919	46	1923	76		

In view of such fluctuations, together with the high percentages of males, it would appear, as Dr. Gilbert suggested in his report for 1917, that there are present each year considerable numbers of males that have been precocious in development and have matured at four years of age instead of at five. It may be recalled that in the Fraser there are precocious males maturing at three years of age and called grilse.

The run of 1927 will be derived from the brood-years 1922 and 1923. While the report from the spawning-beds in 1922 indicated an abundant seeding, the run of that year consisted of only 18 per cent. of five-year-old fish, the smallest percentage of five-year-old fish on record. In his report on the run of 1922, Dr. Gilbert points out that, owing to a strike, fishing did not commence

until about July 10th. He states: "At this time the run is in ordinary years reaching its culminating point and certain changes have occurred in its composition. One of these changes usually concerns the proportions of the four- and five-year fish, the latter in most years running more heavily during the first part of the season. What allowance should be made for this factor it is impossible to judge, for the sequence is not exactly the same in runs of different years. However, the proportions of five-year fish were so much less than in any other year during the same period of the run that we are justified in concluding that this year-group was present in greatly reduced numbers in the run of 1922."

The four-year-old fish of the 1927 run should be derived from the spawning of 1923. The pack of 1923 was large and the report from the spawning-beds in that year indicates that there was an abundant seeding, so that a fair number of four-year-old fish may appear.

However, the 1907–12–17–22 cycle has, with one exception, produced small packs, and in view of the small percentage of five-year-old individuals in the 1922 run it does not appear that a large run may be expected in 1927.

(2.) Age-groups.

Data and scales were obtained from 735 fish in ten samplings from June 29th to August 4th. The various age-groups were represented as follows: 432 individuals four-years-old one-year-in-lake, 283 five-years-old one-year-in-lake, 14 five-years-old two-years-in-lake, and 6 six-years-old two-years-in-lake. The first group was thus the predominant one, forming 59 per cent. of the run. (Tables XIV. and XV.)

The average lengths and weights of the four-year-old fish were above those of recent years, while those of the five-year-old fish showed no significant change. (Tables XVI. and XVII.)

(3.) Distribution of the Sexes.

The distribution of the sexes in the Rivers Inlet runs is the most interesting and puzzling of the four systems under consideration. Throughout all the years of record the four-year-old males have far outnumbered the four-year-old females and the five-year-old females outnumbered the five-year-old males. (Table XVIII.) During the past eleven years in the former group the males have formed an average of 71 per cent., while the average for the females was 29 per cent. In the latter group the males have averaged 39 per cent. and the females 61 per cent. over the same period. A similar condition occurs in the Skeena groups, but the discrepancy is not so pronounced. The total percentage of males in the 1926 run was only slightly higher than the total percentage of females—51 and 49 per cent. respectively. The total percentages in 1922, the brood-year of the 1927 run, were 61 for the males and 39 for the females. It would seem probable that a considerable percentage of the males of the five-year group develop precociously and return a year earlier than normal; that is, in their fourth year instead of their fifth.

Table XII.—Percentages of Four- and Five-year Rivers Inlet Sockeyes in Runs from 1912 to 1926, with Broods from which they were derived.

Run of the Year.	Percentage, Four and Five Years old.	Brood-year from which derived.
1912 (112,884 cases)	5 yrs. 79%	1907 (87,874 cases).
	4 yrs. 21%	1908 (64,652 cases).
1913 (61,745 cases)	5 yrs. 20%	
	4 yrs. 80%	1909 (89,027 cases).
1914 (89,890 cases)	5 yrs. 65%	
	4 yrs. 35%	1910 (126,921 cases).
1915 (130,350 cases)	5 yrs. 87%	
	4 yrs. 13%	1911 (88,763 cases).
1916 (44,936 cases)	5 yrs. 76%	
	4 yrs. 24%	1912 (112,884 cases).
1917 (61,195 cases)	5 yrs. 67%	
	4 yrs. 33%	1913 (61,745 cases).
1918 (53,401 cases)	5 yrs. 43%	
	4 yrs. 57%	1914 (89,890 cases).
1919 (56,258 cases)	5 yrs. 54%	
	4 yrs. 46%	1915 (130,350 cases).
1920 (121,254 cases)	5 yrs. 95%	
	4 yrs. 5%	1916 (44,936 cases).
1921 (46,300 cases)	5 yrs. 51%	
	4 yrs. 49%	1917 (61,195 cases).
1922 (60,700 cases)	5 yrs. 18%	
	4 yrs. 82%	1918 (53,401 cases).
1923 (107,174 cases)	5 yrs. 24%	
	4 yrs. 76%	1919 (56,258 cases).
1924 (94,891 cases)	5 yrs. 56%	
	4 yrs. 44%	1920 (121,254 cases).
1925 (159,554 cases)	5 yrs. 77%	
	4 yrs. 23%	1921 (46,300 cases).
1926 (65,581 cases)	5 yrs. 40%	
	4 yrs. 60%	1922 (60,700 cases).

Table XIII.—Packs of Rivers Inlet since 1907 in Even Thousands, arranged in accordance with the Five-year Cycle.

1907..... 87,000	1912.....112,000	1917..... 61,000	1922..... 60,000
1908..... 64,000	1913..... 61,000	1918..... 53,000	1923.....107,000
1909..... 89,000	1914..... 89,000	1919..... 56,000	1924..... 94,000
1910.....126,000	1915.....130,000	1920.....121,000	1925.....159,000
1911..... 88,000	1916..... 44,000	1921..... 46,000	1926..... 65,000

Table XIV.—Rivers Inlet Sockeyes, Run of 1926, grouped by Age, Sex, and Length, and by their Early History.

Length in Inches.	Number of Individuals.								Total.
	One-year-in-lake Type.				Two-years-in-lake Type.				
	Four Years old.		Five Years old.		Five Years old.		Six Years old.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
20	3	....	....	....	....	....	....	....	3
20½	6	1	....	....	....	....	....	....	7
21	22	2	....	1	1	1	....	....	27
21½	30	6	....	....	1	....	....	....	37
22	39	25	3	2	....	....	....	....	69
22½	38	29	3	4	....	2	....	....	76
23	21	35	4	16	1	2	1	....	80
23½	47	30	7	31	....	2	....	....	115
24	26	22	7	21	....	....	....	....	76
24½	18	6	14	41	2	2	....	....	83
25	12	3	11	22	....	....	....	....	48
25½	9	1	7	18	....	....	....	....	35
26	1	....	15	20	....	....	1	....	37
26½	....	....	7	12	....	....	1	1	21
27	....	....	8	2	....	....	1	1	12
27½	....	....	4	2	....	....	....	....	6
28	....	....	1	....	....	....	....	....	1
Totals	272	160	91	192	5	9	4	2	735
Ave. lengths	22.8	22.9	25.1	24.6	22.9	23.1	25.6	26.8	....

Table XV.—Rivers Inlet Sockeyes, Run of 1926, grouped by Age, Sex, and Weight, and by their Early History.

Weight in Pounds.	Number of Individuals.								Total.
	One-year-in-lake Type.				Two-years-in-lake Type.				
	Four Years old.		Five Years old.		Five Years old.		Six Years old.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
3½	3	....	....	....	....	....	....	....	3
4	40	7	1	....	2	....	....	....	50
4½	63	29	3	6	....	3	....	....	104
5	44	48	2	24	....	1	....	....	119
5½	45	47	8	36	....	3	....	....	139
6	43	22	17	43	2	1	1	....	129
6½	26	5	19	24	1	1	....	....	76
7	6	1	6	22	....	....	....	....	35
7½	2	1	12	20	....	....	....	....	35
8	....	....	11	11	....	....	2	2	26
8½	....	....	4	4	....	....	....	....	8
9	....	....	6	2	....	....	1	....	9
9½	....	....	2	....	....	....	....	....	2
Totals	272	160	91	192	5	9	4	2	735
Ave. weights	5.2	5.2	6.9	6.3	5.3	5.3	7.8	8.0	....

Table XVI.—Average Lengths in Inches of Rivers Inlet Sockeyes for Fifteen Years.

Year.	Four-year Males.	Four-year Females.	Five-year Males.	Five-year Females.
1912	23.2	22.8	25.8	24.6
1913	22.9	23.0	25.9	25.2
1914	23.0	22.8	25.9	25.2
1915	22.9	22.8	26.0	25.1
1916	22.9	22.8	25.8	25.0
1917	22.5	22.3	25.0	24.4
1918	22.3	22.5	24.9	24.5
1919	22.4	22.3	24.8	24.4
1920	....	....	26.0	25.0
1921	22.9	22.6	25.2	24.2
1922	22.5	22.4	24.6	24.2
1923	22.4	22.3	24.6	24.1
1924	22.3	22.3	24.9	24.3
1925	22.2	22.2	25.5	24.8
1926	22.8	22.9	25.1	24.6

Table XVII.—Average Weight in Pounds of Rivers Inlet Sockeyes for Twelve Years.

Year.	Four-year Males.	Four-year Females.	Five-year Males.	Five-year Females.
1914	5.4	5.2	7.3	6.8
1915	5.3	5.1	7.3	6.6
1916	5.5	5.0	7.6	6.7
1917	5.0	4.9	6.6	6.2
1918	4.9	5.1	6.7	6.7
1919	4.9	4.8	6.3	5.9
1921	5.2	4.9	6.9	6.0
1922	6.0	5.9	7.4	7.0
1923	5.0	4.8	6.5	5.9
1924	4.9	4.8	6.6	6.1
1925	4.6	4.4	6.9	6.2
1926	5.2	5.2	6.9	6.3

Table XVIII.—Relative Numbers of Males and Females, Rivers Inlet Sockeyes, One-year-in-lake Type, 1915 to 1926.

	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
Average percentages—												
Four-year males	....	74	75	74	79	74	65	66	71	74	66	63
Four-year females	....	26	25	26	21	26	35	34	29	26	34	37
Five-year males	....	40	42	49	45	48	38	38	33	31	34	32
Five-year females	....	60	58	51	55	52	62	62	67	69	66	68
Percentage total males	45	52	53	66	58	49	51	61	62	50	41	51
Percentage total females	55	48	47	34	42	51	49	39	38	50	59	49

3. THE SKEENA RIVER SOCKEYE RUN OF 1926.

(1.) General Characteristics and Age-groups.

As anticipated last year, the Skeena pack of 1926 was only a fair one, some 82,360 cases. Nothing more could be expected from the brood-years 1921 and 1922, the former of which had the lowest pack on record. A run which fluctuates from year to year as much as the Skeena does can be judged best by grouping the years and comparing the averages. Thus, combining the packs of the last twenty years in four groups of five successive years each, the averages are as follows:—

1907–11.....130,894 cases. 1917–21.....103,183 cases.
1912–16..... 90,513 cases. 1922–26.....106,567 cases.

The deduction is quite obvious—a decline, following which the run has been doing little more than maintaining itself.

Referring to Table XIX., it is seen that in the earlier years of the run, from 1912–20, with but a single exception, the five-year group formed 50 per cent. or more of the runs. Since 1921 in only one year (1924) has this been true. A number of years ago Dr. Gilbert pointed out that in general the largest packs were associated with years in which the percentages of the five-year fish were greatest. It is interesting, then, to note that the pack of 1924 is the largest in the last six years. We are not able to offer any explanation for this apparent reversal in the proportions of four-year and five-year classes during recent years, and it does not seem to have changed the run materially.

It has been more or less apparent that the Skeena run is composed predominately of two age-groups—namely, four-year-olds and five-year-olds. On this account the packs cannot be arranged in either four- or five-year cycles. If conditions are fairly stable and the packs bear some relation to the escapements, then taking the figures of 1914, where 75 per cent. of the pack consisted of five-year-old and 25 per cent. of four-year-old fish, it would be expected that in 1918 there should be a pack of four-year-old fish in the neighbourhood of 30,000 cases and in 1919 a pack of five-year-old fish of 100,000. Using the same method of calculation for 1915, the results give 42,000 for 1919 and 74,000 in 1920. The total for 1918 would be 142,000 cases. The actual pack in 1919 was 185,000 cases. The following figures show the correspondence between the actual pack and the calculated over a period of years:—

	Actual.	Calculated.	Reports from Spawning-beds in Brood-years.
	----------	----------	1912, fair.
1917	66,000	66,000	1913, good.
1918	123,000	59,000	1914, very good.
1919	185,000	140,000	1915, very good.
1920	91,000	99,000	1916, fair.
1921	41,000	62,000	1917; no report.
1922	96,000	92,000	1918, no report.
1923	132,000	130,000	1919, good.
1924	145,000	144,000	1920, poor.
1925	78,000	106,000	1921, fair.
1926	82,000	88,000	1922, very good.
1927	----------	106,000	1923, very good.

Making allowance for the normal fluctuations which occur in any run, for the fact that only two age-groups have been considered, and for the fact that packs do not bear the same relation to the escapement year after year, it will be seen that the correspondence is fairly close and would seem to be additional evidence of the existence of two distinct groups in the Skeena run. It is the only run in which two age-groups play rôles of equal importance. In the Fraser run the four-year-old one-year-in-lake class dominates. The Rivers Inlet run has two components, the five-year-old one-year-in-lake and the four-year-old one-year-in-lake, but the former is by far the more important element. The Nass run resembles the Fraser in having a single predominant group, but in this case it is the five-year-old two-years-in-lake class.

For the last nine years there has been relatively close correspondence between packs and the brood-years from which they have been derived. According to expectancy the pack of 1927 should reach the 100,000 mark. One brood-year, 1921, had a fairly high pack, but did not contain many five-year-old fish, and the other, 1923, had a very good pack with a large per cent. of four-year-old individuals which should be spawning next year and which will likely form a large proportion of the run. In addition, Inspector Gibson reported in both 1922 and 1923 that the spawning-beds were very well seeded.

While the Skeena run is largely composed of the two groups which spend one year in the lake, there are also two others of lesser importance—namely, the five-year-old two-years-in-lake and the six-year-old two-years-in-lake. The percentages of all four year-classes for the last eleven years are given in Table XX.

(2.) Lengths and Weights.

The total number of samples, taken at well-spaced intervals on eighteen different dates, from June 22nd to August 18th, during the run is 2,102. The following eight tables, Nos. XXI.

to XXVIII., furnish the detailed information concerning the size of the fish in this year's run and also give comparisons with former years. These comparisons simply show normal growth. The length and weight of those individuals which spent one year in the lake approximate very closely the averages for the previous year, while the length and weight of the fish which lived two years in fresh water average slightly higher and correspond more nearly to the 1924 figures.

(3.) Proportions of the Sexes.

In regard to proportions of the sexes, 1926 stands as an exception, in that the females outnumbered the males in all the year-classes. However, this condition is not without a parallel in the Skeena. The same relation was true in the run of 1921, one of the brood-years, and in 1920 as well. Usually, as in most of the sockeye-rivers, the four-one males exceed the females, and similarly the five-two males are in excess, although in this group the exceptions are more numerous. (Table XXIX.) Out of the total of 2,102 individuals 885 were males and 1,217 females.

Table XIX.—Percentages of Four- and Five-year Skeena River Sockeyes that spent One Year in Lake, in Runs of Successive Years.

Run of the Year.	Percentage, Four and Five Years old.	Brood-years from which derived.
1912 (92,498 cases)	5 yrs. 43% 4 yrs. 57%	1907 (108,413 cases). 1908 (139,846 cases).
1913 (59,927 cases)	5 yrs. 50% 4 yrs. 50%	1909 (87,901 cases).
1914 (130,166 cases)	5 yrs. 75% 4 yrs. 25%	1910 (187,246 cases).
1915 (116,553 cases)	5 yrs. 64% 4 yrs. 36%	1911 (131,066 cases).
1916 (60,923 cases)	5 yrs. 60% 4 yrs. 40%	1912 (92,498 cases).
1917 (65,760 cases)	5 yrs. 62% 4 yrs. 38%	1913 (52,927 cases).
1918 (123,322 cases)	5 yrs. 59% 4 yrs. 41%	1914 (130,166 cases).
1919 (184,945 cases)	5 yrs. 69% 4 yrs. 31%	1915 (116,553 cases).
1920 (90,869 cases)	5 yrs. 82% 4 yrs. 18%	1916 (60,923 cases).
1921 (41,018 cases)	5 yrs. 24% 4 yrs. 76%	1917 (65,760 cases).
1922 (96,277 cases)*	5 yrs. 19% 4 yrs. 81%	1918 (123,322 cases).
1923 (131,731 cases)	5 yrs. 34% 4 yrs. 66%	1919 (184,945 cases).
1924 (144,747 cases)	5 yrs. 75% 4 yrs. 25%	1920 (90,869 cases).
1925 (77,784 cases)	5 yrs. 47% 4 yrs. 53%	1921 (41,018 cases).
1926 (82,360 cases)	5 yrs. 30% 4 yrs. 70%	1922 (96,277 cases).

* 4,930 cases of Alaska sockeye deducted from original figure of 100,667 cases.

Table XX.—Percentages of the Principal Year-classes, Skeena River Sockeyes, from 1916 to 1926.

Year.	One Year in Lake.		Two Years in Lake.	
	Four Years old.	Five Years old.	Five Years old.	Six Years old.
1916	34	38	13	18
1917	57	29	9	5
1918	51	34	9	6
1919	27	60	9	4
1920	15	71	6	8
1921	69	22	6	3
1922	70	16	12	2
1923	56	29	8	7
1924	23	69	7	1
1925	51	45	3	1
1926	62	26	9	3

Table XXI.—Skeena River Sockeyes, 1926, grouped by Age, Sex, and Length.

Length in Inches.	Number of Individuals.								
	One-year-in-lake Type.				Two-years-in-lake Type.				Total.
	Four Years old.		Five Years old.		Five Years old.		Six Years old.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
19½	1	....	1	....	....	....	....	....	2
20	....	....	....	....	....	....	....	....	....
20½	....	....	....	....	....	....	....	....	....
21	8	3	....	....	....	....	....	....	11
21½	22	15	....	....	....	....	....	....	37
22	27	45	1	....	....	2	....	....	75
22½	44	103	1	1	1	3	1	1	155
23	53	170	3	8	2	18	....	....	254
23½	74	191	7	26	7	26	....	3	334
24	98	140	23	45	20	29	2	2	359
24½	83	70	24	71	27	14	1	7	297
25	63	35	31	67	18	9	3	5	231
25½	29	2	42	53	14	1	1	5	147
26	14	....	37	23	4	....	7	4	89
26½	7	1	24	10	....	....	7	3	52
27	3	....	22	4	....	....	3	....	32
27½	....	....	9	2	....	....	3	....	14
28	....	....	9	....	....	....	1	....	10
28½	....	....	2	....	....	....	....	....	2
29	....	....	....	....	....	....	....	....	....
29½	....	....	....	....	1	....	....	....	1
Totals	526	775	236	310	94	102	29	30	2,102
Ave. lengths	23.8	23.4	25.6	24.8	24.6	23.8	26.0	25.0	....

Table XXII.—Average Lengths of Skeena River Sockeyes, One Year in Lake, for Fifteen Successive Years.

Year.	Four-year Males.	Four-year Females.	Five-year Males.	Five-year Females.
1912	24.6	23.5	26.4	25.2
1913	23.5	22.9	25.5	24.7
1914	24.2	23.4	26.2	25.1
1915	24.2	23.5	25.9	25.0
1916	23.9	23.6	26.2	25.0
1917	23.6	23.2	25.5	24.7
1918	24.1	23.3	25.9	25.0
1919	24.3	23.4	25.7	24.8
1920	23.8	23.2	26.2	25.3
1921	23.8	23.1	25.2	24.2
1922	23.6	23.2	25.3	24.4
1923	23.7	23.1	25.5	24.5
1924	24.1	23.3	26.2	25.2
1925	23.6	22.8	25.6	24.7
1926	23.8	23.4	25.6	24.8

Table XXIII.—Average Lengths of Skeena Sockeyes, Two Years in Lake, for Eleven Successive Years.

Year.	Five-year Males.	Five-year Females.	Six-year Males.	Six-year Females.
1916	24.1	23.8	26.2	24.8
1917	23.9	23.8	25.4	25.0
1918	23.9	23.4	25.2	24.7
1919	24.3	23.4	25.8	24.7
1920	24.1	23.4	26.2	25.1
1921	24.2	23.4	24.9	24.2
1922	23.8	23.3	24.6	24.1
1923	23.9	23.2	25.6	24.4
1924	24.7	23.6	25.8	24.8
1925	24.1	23.3	25.8	24.8
1926	24.6	23.8	26.0	25.0

Table XXIV.—Average Lengths of Skeena River Sockeyes, 1926, compared with 1923, 1924, 1925, and with General Averages, 1912 to 1921.

	Average Lengths, 1926.	Average Lengths, 1925.	Average Lengths, 1924.	Average Lengths, 1923.	Averages, 1912 to 1921.
One year in lake—					
Four-year males	23.8	23.6	24.1	23.7	24.0
Four-year females	23.4	22.8	23.3	23.1	23.3
Five-year males	25.6	25.6	26.2	25.5	25.8
Five-year females	24.8	24.7	25.2	24.5	24.9
Two years in lake—					
Five-year males	24.6	24.1	24.7	23.9	24.1
Five-year females	23.8	23.3	23.6	23.2	23.6
Six-year males	26.0	25.8	25.8	25.6	25.7
Six-year females	25.0	24.5	24.8	24.4	24.8

Table XXV.—Skeena River Sockeyes, 1926, grouped by Age, Sex, and Weight.

Weight in Pounds.	Number of Individuals.								
	One-year-in-lake Type.				Two-years-in-lake Type.				Total.
	Four Years old.		Five Years old.		Five Years old.		Six Years old.		
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	
3	1	1	1	----	----	----	----	----	3
3½	5	2	----	----	----	----	----	----	7
4	49	51	3	1	----	2	----	----	106
4½	80	184	3	13	6	17	1	1	305
5	93	264	19	59	7	33	2	3	480
5½	144	175	33	86	27	33	1	6	505
6	79	73	44	64	35	15	4	5	319
6½	46	23	43	52	12	2	3	8	189
7	25	2	29	25	6	----	6	3	96
7½	3	----	36	7	----	----	7	4	57
8	1	----	13	1	----	----	2	----	17
8½	----	----	7	2	----	----	2	----	11
9	----	----	4	----	----	----	1	----	5
9½	----	----	1	----	----	----	----	----	1
10	----	----	----	----	1	----	----	----	1
Totals	526	775	236	310	94	102	29	30	2,102
Ave. weights	5.3	5.1	6.5	5.8	5.9	5.2	6.9	6.2	....

Table XXVI.—Average Weights of Skeena River Sockeyes, One Year in Lake, for Thirteen Successive Years.

Year.	Four-year Males.	Four-year Females.	Five-year Males.	Five-year Females.
1914	5.9	5.3	7.2	6.3
1915	5.7	5.2	6.8	6.2
1916	5.4	5.1	7.1	6.3
1917	5.3	5.0	6.4	6.0
1918	5.8	5.3	6.9	6.4
1919	6.1	5.5	7.0	6.2
1920	5.6	5.1	7.2	6.4
1921	5.7	5.1	6.4	5.7
1922	5.4	5.1	6.5	5.7
1923	5.3	4.9	6.3	5.7
1924	5.6	5.0	7.0	6.3
1925	5.1	4.7	6.5	5.8
1926	5.3	5.1	6.5	5.8

Table XXVII.—Average Weights of Skeena River Sockeyes, Two Years in Lake, for Twelve Successive Years.

Year.	Five-year Males.	Five-year Females.	Six-year Males.	Six-year Females.
1915	5.9	5.2	6.6	6.0
1916	5.8	5.4	7.1	5.9
1917	5.5	5.2	6.3	5.8
1918	5.7	5.3	6.6	6.1
1919	6.1	5.4	6.9	6.3
1920	6.3	5.1	7.3	6.3
1921	5.8	5.1	6.0	5.6
1922	5.5	5.1	6.2	5.7
1923	5.3	4.8	6.3	5.4
1924	5.9	5.1	6.6	5.8
1925	5.5	4.9	6.9	5.4
1926	5.9	5.2	6.9	6.2

Table XXVIII.—Average Weights of Skeena River Sockeyes, 1926, compared with 1923, 1924, 1925, and with General Averages, 1912 to 1921.

	Average Weights, 1926.	Average Weights, 1925.	Average Weights, 1924.	Average Weights, 1923.	Averages, 1912 to 1921.
One year in lake—					
Four-year males	5.3	5.1	5.6	5.3	5.7
Four-year females	5.1	4.7	5.0	4.9	5.2
Five-year males	6.5	6.5	7.0	6.3	6.8
Five-year females	5.8	5.8	6.3	5.7	6.2
Two years in lake—					
Five-year males	5.9	5.5	5.9	5.3	5.9
Five-year females	5.2	4.9	5.1	4.8	5.2
Six-year males	6.9	6.9	6.6	6.3	6.7
Six-year females	6.2	5.4	5.8	5.4	6.0

Table XXIX.—Percentages of Males and Females in each of the Different Year-groups, Skeena River Sockeyes, in a Series of Years.

Year.	One Year in Lake.				Two Years in Lake.			
	Four Years old.		Five Years old.		Five Years old.		Six Years old.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1912	54	46	42	58	....	....	....	....
1913	69	31	47	53	....	....	....	....
1914	60	40	47	53	....	....	....	....
1915	55	45	45	55	....	....	....	....
1916	70	30	43	57	56	44	54	46
1917	65	35	48	52	65	35	58	42
1918	63	37	46	54	61	39	56	44
1919	53	47	46	54	52	48	45	55
1920	41	59	37	63	43	57	41	59
1921	44	56	44	56	50	50	43	57
1922	52	48	41	59	52	48	53	47
1923	60	40	37	63	56	44	40	60
1924	50	50	43	57	46	54	46	54
1925	57	43	42	58	45	55	47	53
1926	40	60	43	57	48	52	49	51

4. THE NASS RIVER SOCKEYE RUN OF 1926.

(1.) General Characteristics.

An apparent instability of the Nass River run has been pointed out several times during the past few years and a fear that the run is materially declining has also been expressed. As has been known for some time, the Nass cycle is a five-year one. In 1925 we said that the outlook for this year (1926) was discouraging because its brood-year (1921) had the smallest pack yet recorded. Consequently it is no surprise to find the pack of 1926 only 15,929 cases. Looking at it simply as the second smallest pack on record, one might feel justified in accepting it as evidence of further decline. On the other hand, in viewing the situation as a whole, there seems to be reason for believing that the run has maintained itself during the last five years, for the average annual pack of this last cycle, from 1922 to 1926, is 23,512 cases, against 19,673 cases for the preceding cycle, 1917 to 1921. Furthermore, in 1925 we called attention to the fact that the packs of 1923, 1924, and 1925 showed a rather close correspondence to the packs of their brood-years, 1918, 1919, and 1920 respectively, and likewise there is a similar correspondence

between 1926 and 1921. This seeming tendency of return to normal expectancy, together with the facts that the brood-years for 1927 and 1929 had large packs, and that three out of five of Inspector Hickman's reports for the past five years state that the spawning-beds were very well seeded and the fish were exceedingly numerous, are all hopeful signs. If one can place reliance on such signs as a brood-year pack of 31,277 cases with 90 per cent. of the run five-year-old fish, and also Mr. Hickman's statement in 1922, "It was indeed a great pleasure to find so many fish, as the runs of the past few years have been very poor," then there should be a good pack in 1927.

(2.) Age-groups.

The consideration of the age-groups of the Nass run is always more interesting than that of those of the Fraser, Rivers Inlet, and the Skeena. We find not only older fish than are found in the runs to the other rivers, but also a greater variety in the combination of years the fish spend in fresh and salt water. Some fish go to the sea as fry and return at the end of either three or four years; again, others remain in the fresh water one, or two, or three, or even four years before making their way to the ocean, where they stay from two to five summers before going back to their native streams. However, this great complexity usually resolves itself into eight principal age-groups. The analysis of the run of 1926 was based upon 1,836 samples taken every three or four days over a period of two months, beginning on June 23rd and extending to August 20th. The usual eight age-groups are all present and are indicated in Tables XXXI. and XXXIV. An additional group, hitherto unreported, consisting of four full years spent in fresh water and three summers in the sea, was represented by a single male specimen taken on July 30th and having a length of 28 inches and a weight of 7½ lb.

Table XXX. gives a comparison of the percentages of the principal age-groups over a period of fifteen years. Perhaps the most striking point in it is the decided decrease in the numbers of the five-year-old one-year-in-lake class. Several interesting facts are brought out by combining the figures in this table in three five-year periods, as follows:—

	One Year in Lake.		Two Years in Lake.	
	Four Years old.	Five Years old.	Five Years old.	Six Years old.
1912–16	11	22	62	5
1917–21	13	15	65	7
1922–26	11	7	77	5

Although the four-year-old one-year-in-lake and the six-year-old two-years-in-lake classes have fluctuated considerably from year to year, the averages over the period of years are fairly constant. The decline in the five-year-old one-year-in-lake class is steady and in general has been replaced by an increase in the dominant group, five-year-old two-years-in-lake.

Comparing the 1926 averages with the above and the general averages over fifteen years, perhaps the most noticeable point is the record percentage of the six-year-old two-years-in-lake class. The four-year-old one-year-in-lake group is very constant in all cases and the five-year-old two-years-in-lake class approximates quite closely the averages for the two periods 1912–16 and 1917–21, and also the general average. Taking the entire run into account and disregarding the years spent in fresh water, and considering only the final age, it is worth while pointing out that 12 per cent. of the fish were in the fourth year, 71 per cent. in the fifth year, and 17 per cent. in the sixth and seventh years. In addition there were seven fish in their third year. Such a run as this, with high percentages of the older fish, is much more valuable commercially than a run in which the four-year-old group forms a greater proportion of the whole (as in 1925), because the individuals of this class are much smaller and lighter in weight.

(3.) Lengths and Weights.

A peculiarity of the Nass sockeyes already stated by Dr. Gilbert is that these fish maintain from year to year their general averages in length and weight, while the fish of the other northern runs, the Skeena and Rivers Inlet, have shown a marked reduction during recent

years. The run of 1926 is true to type, and is tabulated for length in Table XXXI. and for weight in Table XXXIV. In Tables XXXII. and XXXIII., which record the average lengths of the principal year-classes over a period of years, one sees at a glance that the average lengths for 1926 exceed those of 1925 in all groups. Similarly, Tables XXXV. and XXXVI. show that the average weights for 1926 are in all cases equal to, if not greater than those of the preceding year. Another racial characteristic also pointed out by Dr. Gilbert is that the ultimate size of the Nass fish is not solely determined, as in the other streams, by the number of years spent feeding at sea. That is to say that, irrespective of age, the Fraser River, Rivers Inlet, and Skeena River fish which have lived the same number of summers at sea are approximately the same size; for example, a three-year sea-type, a four-year-old one-year-in-lake, and a five-year-old two-years-in-lake are of equal size; and likewise a four-year sea-type, a five-year-old one-year-in-lake, and a six-year-old two-years-in-lake are all the same. This is well illustrated in Table XXXVII. On the other hand, the Nass fish are decidedly different in this respect. Fish which have spent an identical number of summers at sea are not of identical or nearly identical size, but are graded in an ascending series according to age. Table XXXVII. shows this also. This seems to be a definite racial characteristic. What the reason for it is we do not know, but seemingly it is not directly related to sea-feeding. Age seems to be the all-important factor. Tables XXXVIII. and XXXIX. are given to show the relation between age and size. In considering the four-year-old fish it is seen that there is only a very slight difference (about half an inch) between the average lengths of the males (and similarly for the females) of the four-year sea-type and four-year-old one-year-in-lake group. The same thing is true in regard to weights. With the five-year-old fish, for length the balance swings slightly in favour of the five-year-old two-years-in-lake; for weight it swings slightly in favour of the five-year-old one-year-in-lake. The six-year-old fish tell the same tale; that is, the difference between the two groups is inconsequential. In this river it looks as if particular age (irregardless of place where the years are spent) is linked with a particular size, and in general the ascending scale of years is correlated with increase in size. Our data are very scarce at both ends of the series and cannot be judged too critically for that reason. As it stands, the three-year-old fish begin the series as the smallest, but the seven-year-old fish, especially the males, do not complete it as the largest.

(4.) Seasonal Changes during the Run.

One of the very interesting things about the complex Nass run is that the various age-groups show year after year a remarkable constancy in seasonal change. The dominant group, the five-year-old two-years-in-lake, is present throughout the run with varying degrees of strength. The four-year-old one-year-in-lake and the five-year-old one-year-in-lake classes are also present throughout, but reach their greatest numbers during the second and third weeks of July. The two sea-type groups are confined to the early weeks and the six- and seven-year-old fish to the later part of the run. Table XL. exhibits these features in the run of 1926.

(5.) The Meziadin and Bowser Lake Sockeye Colonies.

In September Inspector Hickman made his annual visit to the Meziadin watershed and secured additional material for the study of the Meziadin and Bowser colonies. Although he fished a net continuously for eight days in the Nass River 2 miles above the mouth of the Meziadin, he obtained only eleven sockeyes. He attributes this to a run less than average. The analysis of small amounts of material is always unsatisfactory and in the course of time it may prove unreliable. Because of meagre material one is more surprised to find from year to year fairly close correspondence than lack of conformity in the comparison of the Meziadin and Bowser colonies. These two populations have been separated on the following characters: First, the fish of the former spend a greater number of years in fresh water; and, secondly, they are larger than those of the latter colony. As is seen in Table XLI., the data for 1926 substantiates in part the first distinction; that is, the relation between the percentages of the one- and two-years-in-lake groups is correct, but in the case of the three-years-in-lake the percentages are reversed. Eighteen per cent. is considerably larger than the percentages of previous years when more material was available. The size differences are given in Tables XLII. and XLIII. It has been claimed that the larger fish are late running, and in order to show this we tabulated on

a series of dates the lengths of the 1,094 individuals of the dominant class (two-years-in-lake) of this year's run to the Nass. The average lengths for the dates are given below:—

	Males.	Females.
June 23, 29	25.8	25.1
July 5, 9	26.1	25.5
July 12, 16	26.1	25.2
July 19, 22	26.1	25.1
July 26, 30	25.7	25.2
August 2, 6	26.5	25.5
August 9, 13	26.5	25.7
August 16, 20	26.6	25.7

On the whole there is a steady increase, but it is very slight, nearly 1 inch for the males and 0.6 inch for the females. Out of the 485 males only eighteen are 28 inches or more in length. Yet the average length of the Meziadin males is 28.1 inches and of the females 26.3. Also, seventeen out of the twenty-two males had a fresh-water growth of two years. The margins of the scales are badly absorbed, so that it is impossible to tell from them the number of summers spent in the sea. But from the other facts at hand it would seem that in 1926 the majority of the Meziadin males had spent three summers in the sea; that is to say, they belong to the six-year-old two-years-in-lake class and not the five-year-old two-years-in-lake. The size of the Meziadin fish corresponds closely to the general averages for this group—namely, 27.9 inches for males and 27 for the females. In addition the six-year-old two-years-in-lake are pre-eminently a late-running group.

The Bowser material is really too scanty to comment upon, but the lengths are suggestive of five-year-old fish rather than six.

The fact that so many of the Meziadin fish are likely six-year-old two-years-in-lake is in no way contradictory to the claim that this colony is made up of larger fish. It is very probable that this year is an exception rather than the rule, because usually this year-class forms an extremely small proportion of the whole run. We have very little data for actual comparison. No collection of Meziadin fish was made in 1925 and the figures for 1924 would seem to indicate five-year-old fish instead of six.

The interesting point in connection with these six-year-old fish is that they seem to be particularly associated with Meziadin Lake. Inspector Hickman took them from the fishway in Meziadin River at the same time that he was operating the net in the Nass. If these large fish had been running up the Nass also, they could not have escaped capture.

Table XXX.—Percentages of Principal Age-groups present in the Nass River Sockeye Run from 1912 to 1926.

Year.	Percentage of Individuals that spent			
	One Year in Lake.		Two Years in Lake.	
	Four Years old.	Five Years old.	Five Years old.	Six Years old.
1912 (36,037 cases)	8	27	63	2
1913 (23,574 cases)	15	12	71	2
1914 (31,327 cases)	4	41	45	10
1915 (39,349 cases)	19	14	59	8
1916 (31,411 cases)	9	17	66	8
1917 (22,188 cases)	10	15	71	4
1918 (21,816 cases)	30	16	45	9
1919 (28,259 cases)	7	22	65	6
1920 (16,740 cases)	8	14	72	6
1921 (9,364 cases)	10	7	75	8
1922 (31,277 cases)	6	2	91	1
1923 (17,821 cases)	11	6	77	6
1924 (33,590 cases)	4	3	91	2
1925 (18,945 cases)	23	8	67	2
1926 (15,929 cases)	12	12	63	13

Table XXXI.—Nass River Sockeyes, 1926, grouped by Age, Sex, and Length, and by their Early History.

Length in Inches.	Number of Individuals.																Total.
	One-year-in-lake Type.				Two-years-in-lake Type.				Three-years-in-lake Type.				No Year in Lake (Sea-type).				
	Four Years old.		Five Years old.		Five Years old.		Six Years old.		Six Years old.		Seven Years old.		Three Years old.		Four Years old.		
	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	
21½	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
22	....	3	....	1	1	....	....	....	....	....	....	....	....	1	....	....	6
22½	2	6	....	....	....	1	....	....	....	....	....	....	....	1	1	....	11
23	4	18	....	1	2	6	....	1	....	....	....	....	1	....	....	....	33
23½	3	14	1	2	3	9	....	1	....	....	....	....	1	....	....	3	37
24	15	25	1	8	17	49	....	2	....	1	....	....	3	....	2	6	129
24½	11	14	4	15	4	43	....	1	....	2	....	....	....	....	....	1	95
25	24	25	10	44	39	174	3	3	1	8	....	....	....	....	....	1	332
25½	14	3	12	9	48	104	2	3	2	3	....	....	....	....	1	....	201
26	10	5	25	21	164	149	4	6	10	18	....	....	....	....	....	....	412
26½	1	2	10	5	74	51	2	13	2	7	....	....	....	....	1	....	168
27	2	....	26	9	98	20	14	21	11	3	....	2	....	....	....	....	206
27½	....	....	2	2	17	1	20	17	2	1	2	....	....	....	....	....	64
28	1	1	1	....	14	2	38	19	3	....	1	....	....	....	....	....	80
28½	....	....	....	....	1	....	18	3	1	....	2	....	....	....	....	....	25
29	....	....	1	....	1	....	18	5	....	....	1	....	....	....	....	....	26
29½	....	....	....	....	1	....	3	....	....	....	....	....	....	....	....	....	4
30	....	....	....	....	1	....	4	....	....	....	....	....	....	....	....	....	5
Totals	87	117	93	117	485	609	126	95	32	43	6	2	5	2	5	11	1,835
Ave. lengths	24.9	24.1	26.1	25.3	26.1	25.3	27.9	27.0	26.7	25.8	28.2	27.0	23.7	22.3	24.5	24.0	.....

Table XXXII.—Nass River Sockeyes, Average Lengths of Principal Classes from 1912 to 1926.

	One Year in Lake.				Two Years in Lake.			
	Four Years old.		Five Years old.		Five Years old.		Six Years old.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1912 (inches)	24.6	23.3	26.5	25.1	26.2	25.4	27.0	25.6
1913 „	24.1	23.5	25.6	24.8	26.0	25.2	26.0	26.6
1914 „	24.6	22.7	26.1	25.1	26.3	25.5	26.9	25.6
1915 „	24.0	23.5	25.9	25.2	26.5	25.9	26.6	25.3
1916 „	24.5	23.3	26.4	25.0	26.5	25.6	27.9	25.7
1917 „	23.4	23.2	25.5	24.7	25.3	24.7	26.5	25.5
1918 „	25.0	24.3	25.7	24.7	25.9	25.0	27.2	25.2
1919 „	24.9	24.1	26.2	25.2	26.5	25.8	27.9	26.7
1920 „	24.0	23.4	26.3	25.0	26.7	25.9	27.4	25.9
1921 „	24.3	23.5	25.5	24.3	26.2	25.6	27.9	26.2
1922 „	24.2	23.4	25.6	24.6	25.7	25.0	28.0	25.9
1923 „	24.3	23.7	25.9	25.3	26.2	25.5	27.2	26.5
1924 „	24.7	23.8	26.2	24.9	26.3	25.4	28.0	25.4
1925 „	24.4	23.8	25.9	24.7	25.9	25.0	26.9	25.4
1926 „	24.9	24.1	26.1	25.3	26.1	25.3	27.9	27.0

Table XXXIII.—Average Lengths of Principal Classes of Nass River Sockeyes, 1926, compared with 1925, 1924, 1923, and with General Averages of 1912 to 1921.

	Average Lengths, 1926.	Average Lengths, 1925.	Average Lengths, 1924.	Average Lengths, 1923.	General Averages, 1912 to 1921.
One year in lake—					
Four-year males	24.9	24.4	24.7	24.3	24.3
Four-year females	24.1	23.8	23.8	23.7	23.5
Five-year males	26.1	25.9	26.2	25.9	26.0
Five-year females	25.3	24.7	24.9	25.3	24.9
Two years in lake—					
Five-year males	26.1	25.9	26.3	26.2	26.2
Five-year females	25.3	25.0	25.4	25.5	25.5
Six-year males	27.9	26.9	28.0	27.2	27.1
Six-year females	27.0	25.4	25.4	26.5	25.8

Table XXXIV.—Nass River Sockeyes, 1926, grouped by Age, Sex, and Weight, and by their Early History.

Weight in Pounds.	Number of Individuals.																Total.
	One-year-in-lake Type.				Two-years-in-lake Type.				Three-years-in-lake Type.				No Year in Lake (Sea-type).				
	Four Years old.		Five Years old.		Five Years old.		Six Years old.		Six Years old.		Seven Years old.		Three Years old.		Four Years old.		
	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	Males.	Fems.	
4	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
4½	3	18	....	3	2	9	....	....	....	....	....	....	....	2	....	....	37
5	6	27	2	7	12	37	....	2	1	....	....	....	1	....	2	4	101
5½	23	39	3	17	20	146	1	4	....	8	....	....	3	....	1	1	266
6	25	22	4	34	81	194	2	4	4	17	....	....	1	....	....	4	392
6½	21	7	31	29	162	166	11	17	10	10	1	....	....	....	....	2	467
7	9	2	23	18	124	44	20	30	9	8	1	1	....	....	2	....	291
7½	....	1	20	7	61	12	19	19	5	....	2	1	....	....	....	....	157
8	....	....	9	2	20	1	33	12	2	....	....	....	....	....	....	....	79
8½	....	....	1	....	1	....	15	6	1	....	1	....	....	....	....	....	25
9	....	....	....	....	2	....	9	1	....	....	1	....	....	....	....	....	13
9½	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	4
10	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	2
Totals	87	117	93	117	485	609	126	95	32	43	6	2	5	2	5	11	1,835
Ave. weights	6.0	5.4	6.9	6.2	6.7	6.0	7.8	7.1	6.8	6.2	7.7	7.3	5.5	4.5	5.9	5.7	.....

Table XXXV.—Nass River Sockeyes, Average Weights of Principal Classes from 1913 to 1926.

	One Year in Lake.				Two Years in Lake.			
	Four Years old.		Five Years old.		Five Years old.		Six Years old.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1913 (pounds)	5.5		6.3		6.5		6.7	
1914 „	6.2	5.0	7.4	6.5	7.2	6.5	7.9	6.8
1915 „	5.6	5.2	6.9	6.4	7.0	6.6	7.2	6.5
1916 „	6.0	5.3	7.2	6.3	7.2	6.2	8.1	6.4
1917 „	5.3	5.3	6.8	6.2	6.3	5.8	7.3	6.4
1918 „	6.3	5.8	7.2	6.3	7.2	6.4	8.3	6.7
1919 „	6.0	5.5	6.6	5.9	6.7	6.1	7.8	6.7
1920 „	5.6	5.2	7.4	6.3	7.4	6.7	7.9	7.0
1921 „	6.0	5.4	6.9	6.1	6.9	6.3	7.7	6.6
1922 „	5.9	5.4	6.8	6.2	6.8	6.3	8.1	6.6
1923 „	5.8	5.2	6.7	6.1	6.6	6.0	7.2	6.8
1924 „	5.9	5.4	7.2	6.1	6.8	6.1	8.0	6.5
1925 „	5.9	5.4	6.8	6.1	6.7	6.0	7.4	6.3
1926 „	6.0	5.4	6.9	6.2	6.7	6.0	7.8	7.1

Table XXXVI.—Average Weights of Principal Classes of Nass River Sockeyes, 1926, compared with 1925, 1924, 1923, and with General Averages of 1914 to 1921.

	Average Weights, 1926.	Average Weights, 1925.	Average Weights, 1924.	Average Weights, 1923.	General Averages, 1914 to 1921.
One year in lake—					
Four-year males	6.0	5.9	5.9	5.8	5.9
Four-year females	5.4	5.4	5.4	5.2	5.3
Five-year males	6.9	6.8	7.2	6.7	7.0
Five-year females	6.2	6.1	6.1	6.1	6.3
Two years in lake—					
Five-year males	6.7	6.7	6.8	6.6	7.0
Five-year females	6.0	6.0	6.1	6.0	6.3
Six-year males	7.8	7.4	8.0	7.2	7.8
Six-year females	7.1	6.3	6.5	6.8	6.6

Table XXXVII.—Nass, Fraser, and Skeena Rivers and Rivers Inlet Sockeyes, 1923 and 1926, grouped by Number of Years spent on the Sea-feeding Grounds.

Age.		Nass.		Fraser.		Skeena.		Rivers Inlet.	
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
	Year 1923.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.	Inches.
	Three years at sea—								
3	Sea-type	23.1	22.4	23.0	22.6	.....	.....	.....	.....
4	One-year-in-lake type	24.3	23.7	24.0	23.0	23.7	23.1	22.4	22.3
5	Two-years-in-lake type	26.2	25.5	23.5	22.7	23.9	23.2	23.0	23.0
	Four years at sea—								
4	Sea-type	25.5	24.3	25.5	24.2	.....	.....	.....	.....
5	One-year-in-lake type	25.9	25.3	25.8	24.1	25.5	24.5	24.6	24.1
6	Two-years-in-lake type	27.2	26.5	25.4	24.3	25.6	24.4	.....	.....
	Year 1926.								
	Three years at sea—								
3	Sea-type	23.7	22.3	23.4	22.5	.....	.....	.....	.....
4	One-year-in-lake type	24.9	24.1	22.6	22.3	23.8	23.4	22.8	22.9
5	Two-years-in-lake type	26.1	25.3	23.2	22.4	24.6	23.8	22.9	23.1
	Four years at sea—								
4	Sea-type	24.5	24.0	25.4	24.6	.....	.....	.....	.....
5	One-year-in-lake type	26.1	25.3	24.6	24.0	25.6	24.8	25.1	24.6
6	Two-years-in-lake type	27.9	27.0	25.5	23.7	26.0	25.0	25.6	26.8

Table XXXVIII.—Nass River Sockeyes, 1919–26, grouped by Age, Sex, and Average Lengths of Principal Age-groups.

Year.	Average Lengths in Inches of Groups.															
	Three Years old.		Four Years old.				Five Years old.				Six Years old.				Seven Years old.	
	Sea-type.		One-year-in-lake Type.		Sea-type.		One-year-in-lake Type.		Two-years-in-lake Type.		Two-years-in-lake Type.		Three-years-in-lake Type.		Three-years-in-lake Type.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1919	.....	.....	24.9	24.1	26.1	25.1	26.2	25.2	26.5	25.8	27.9	26.7	28.2	26.5	27.2	28.0
1920	.....	.....	24.0	23.4	.....	.....	26.3	25.0	26.7	25.9	27.4	25.9	26.6	26.7	.....	.....
1921	23.1	22.4	24.3	23.5	24.2	23.6	25.5	24.3	26.2	25.6	27.9	26.2	26.9	26.5	.....	.....
1922	.....	.....	24.2	23.4	24.5	23.5	25.6	24.6	25.7	25.0	28.0	25.9	26.2	25.4	.....	.....
1923	.....	.....	24.3	23.7	25.5	24.3	25.9	25.3	26.2	25.5	27.2	26.5	26.1	25.5	.....	.....
1924	.....	.....	24.7	23.8	.....	.....	26.2	24.9	26.3	25.4	28.0	25.4	27.1	26.4	.....	.....
1925	.....	.....	24.4	23.8	.....	.....	25.9	24.7	25.9	25.0	26.9	25.4	26.3	25.3	.....	.....
1926	23.7	22.3	24.9	24.1	24.5	24.0	26.1	25.3	26.1	25.3	27.9	27.0	26.7	25.8	28.2	27.0
Ave. lengths..	.....	.....	24.5	23.7	25.0	24.1	26.0	24.9	26.2	25.4	27.6	26.1	26.8	26.0	.....	.....

Table XXXIX.—Nass River Sockeyes, 1919–26, grouped by Age, Sex, and Average Weights of Principal Age-groups.

Year.	Average Weights in Pounds of Groups.															
	Three Years old.		Four Years old.				Five Years old.				Six Years old.				Seven Years old.	
	Sea-type.		One-year-in-lake Type.		Sea-type.		One-year-in-lake Type.		Two-years-in-lake Type.		Two-years-in-lake Type.		Three-years-in-lake Type.		Three-years-in-lake Type.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1919	....	....	6.0	5.5	6.4	5.7	6.6	5.9	6.7	6.1	7.8	6.7	7.7	7.0	7.1	7.5
1920	....	....	5.6	5.2	....	....	7.4	6.3	7.4	6.7	7.9	7.0	7.6	6.9	....	....
1921	5.0	4.6	6.0	5.4	5.9	5.5	6.9	6.1	6.9	6.3	7.7	6.6	7.0	6.5	....	....
1922	....	....	5.9	5.4	6.1	5.5	6.8	6.2	6.8	6.3	8.1	6.6	7.5	6.3	....	....
1923	....	....	5.8	5.2	7.0	5.5	6.7	6.1	6.6	6.0	7.2	6.8	6.7	6.3	....	....
1924	....	....	5.9	5.4	....	....	7.2	6.1	6.8	6.1	8.0	6.5	7.3	6.5	....	....
1925	....	....	5.9	5.4	....	....	6.8	6.1	6.7	6.0	7.4	6.3	6.8	6.0	....	....
1926	5.5	4.5	6.0	5.4	5.9	5.7	6.9	6.2	6.7	6.0	7.8	7.1	6.8	6.2	7.7	7.3
Ave. weights	....	....	5.9	5.4	6.2	5.6	6.9	6.1	6.8	6.2	7.7	6.7	7.2	6.5	....	....

Table XL.—Number of Individuals of each Class of Nass River Sockeyes running at Different Dates in 1926.

Date.	One Year in Lake.		Two Years in Lake.		Three Years in Lake.		Sea-type.		Number of Individuals examined.
	Four Years old.	Five Years old.	Five Years old.	Six Years old.	Six Years old.	Seven Years old.	Three Years old.	Four Years old.	
June 23	9	15	74	1	.....	.....	4	12	115
June 29	12	8	100	.....	.....	.....	3	1	124
July 5	12	10	95	2	.....	.....	.....	.....	119
July 9	17	14	85	7	.....	.....	.....	1	124
July 12	14	15	85	2	.....	.....	.....	1	117
July 16	13	21	77	3	1	.....	.....	.....	115
July 19	26	26	62	7	.....	.....	.....	1	122
July 23	18	26	62	6	1	1	.....	.....	114
July 26	17	19	54	20	2	.....	.....	.....	112
July 30	11	19	57	19	6	.....	.....	.....	112
August 2	24	19	50	19	1	2	.....	.....	115
August 6	12	4	68	21	12	.....	.....	.....	117
August 9	7	5	64	31	12	1	.....	.....	120
August 13	5	3	59	36	13	2	.....	.....	118
August 16	6	4	61	25	19	2	.....	.....	117
August 20	1	2	41	22	8	.....	.....	.....	74
Individuals	204	210	1,094	221	75	8	7	16	1,835

Table XLI.—Percentages of Meziadin and Bowser Lake Runs, showing Different Number of Years in Fresh Water.

	Years in Lake.			No. of Specimens.
	One Year.	Two Years.	Three Years.	
Meziadin, 1922	....	80	20	10
Meziadin, 1923	13	84	3	63
Meziadin, 1924	....	76	24	160
Meziadin, 1925 (no collection)	....	....	....	....
Meziadin, 1926	2	93	5	43
Bowser, 1922	40	60	....	15
Bowser, 1923	33	64	3	41
Bowser, 1924	18	79	3	34
Bowser, 1925	16	80	4	45
Bowser, 1926	27	55	18	11

Table XLII.—Average Lengths of the Meziadin and Bowser Lake Sockeyes for the Years 1924, 1925, and 1926.

Year.	Meziadin Lake.		Bowser Lake.	
	Males.	Females.	Males.	Females.
1924	26.8	25.7	25.5	25.6
1925	.....	.....	23.8	23.3
1926	28.1	26.3	25.9	24.8

Table XLIII.—The Lengths of Individuals comprising the Meziadin and Bowser Lake Runs in 1926.

Length in Inches.	Number of Individuals from			
	Meziadin Lake.		Bowser Lake.	
	Males.	Females.	Males.	Females.
23	----	----	1	----
23½	1	----	----	1
24	----	----	----	1
24½	----	----	----	2
25	----	4	----	----
25½	1	3	1	1
26	----	7	----	----
26½	----	1	1	1
27	1	1	1	----
27½	1	----	1	----
28	10	4	----	----
28½	3	1	----	----
29	2	----	----	----
29½	----	----	----	----
30	2	----	----	----
30½	1	----	----	----
Totals	22	21	5	6
Average lengths	28.1	26.3	25.9	24.8

THE SPAWNING-BEDS OF THE FRASER RIVER.

Hon. William Sloan,
Commissioner of Fisheries, Victoria, B.C.

SIR,—I have the honour to submit the following report of my twenty-fourth annual inspection of the salmon fishing and spawning areas of the Fraser River, made during the year 1926:—

The catch of all species of salmon in the Provincial waters of the Fraser River system this year produced a pack of 274,951 cases, as against 276,855 cases in 1925, 212,059 cases in 1924, and 140,570 cases in the fourth preceding year, 1922.

The pack consisted of 85,689 cases of sockeye, 21,783 cases of cohoes, 32,256 cases of pinks, 32,952 cases of springs, and 88,495 cases of chums. The pack of sockeye was the largest since 1917. It exceeded the pack of the fourth preceding year by 33,857 cases.

The catch of sockeye in the State of Washington waters of the Fraser River system in 1926 produced a pack of 44,673 cases of sockeye, as against 112,023 cases in 1925 and 48,566 cases in the fourth preceding year, 1922.

The total catch of sockeye in the entire Fraser system in 1926 produced a pack of 130,362 cases. It was 17,046 cases less than in 1925 and 29,964 cases more than in its brood-year 1922.

The increased catch of sockeye in the Provincial waters and the decrease in the catch in the State of Washington waters is attributed to an unusual occurrence. Ordinarily the greater proportion of the pack in the entire system is made in July and August—mainly in August. The catches made there in those months this year produced an approximate pack of 75,000 cases, of which 43,000 cases were packed in Washington and 32,000 cases in Provincial waters. The catches made in September and October this year were made in Provincial waters. The numbers caught in those months in Washington waters did not materially increase the pack made in July and August. This unusual occurrence is attributed to the fact that in September and October this year a considerable number of sockeye gained access to the Gulf of Georgia without having been intercepted in other waters. In consequence the Provincial fishing-fleet made good catches in both of those months. The traps in Juan de Fuca Strait and the traps and purse-nets in the estuary waters of the State of Washington that lead to the Gulf from the south, and the nets used in the estuary waters that lead to the gulf from the north, caught very few sockeye in September and October. None of the fishermen engaged in those waters report having any evidence that any considerable number of sockeye passed through them in those months. How the September and October runs of sockeye gained access to the gulf without being observed or intercepted by fishermen operating to the south and north of the gulf is not in evidence.

Having gained access to the gulf without interception, the September and October runs were drawn upon only by the fishermen engaged in the gulf and in the Fraser River proper, and their operations were limited to five days each week by the weekly closed season provided in Canadian regulations, which prohibits fishing in the gulf and the Fraser up to New Westminster Bridge for forty-seven hours each week, and for sixty hours each week up to Mission Bridge. Instead of being drawn upon as usual by both the Washington and the Provincial fleets, they were drawn upon only by the latter, which this year consisted of less than 1,000 gill-net boats. In consequence the number caught from the runs was proportionately less than usual and the number which escaped capture and reached the spawning-beds of the Fraser River was greater than in any year since 1913.

The remarkable increase in the catches of sockeye in the Provincial waters of the Fraser system this year attracted great local interest and led to the assertion that the run to the Fraser system was far in excess of any year since 1917, and indicated that "the former runs of sockeye were coming back. . . . That the sockeye runs to the Fraser are being restored." Unquestionably the number of sockeye caught in the Provincial waters of the Fraser system this year was greater than in any year since 1917. That, however, does not show that the number of sockeye that sought entrance to the Fraser this year was greater than in any year since 1917, and as a matter of fact it was not materially greater. Judged from the size of the pack made in the system this year, it was less than last year. The pack made from Provincial waters was more; the pack made in Washington waters was less. The combined pack this year was 17,046 cases less than in 1925. The size of the run in any year is not shown by the pack made in Provincial waters or that made in Washington waters. That can only be determined from the pack records of the combined catch made in Provincial and State waters. In this connection

it is interesting to note that the sockeye-pack records in the Fraser system in the period 1915–25, inclusive, show that 70 per cent. of the pack was made from fish caught in Washington waters and 30 per cent. from Provincial waters. This year the proportions were reversed for the first time in many years. Sixty-seven per cent. were taken from Provincial waters and 33 per cent. from Washington waters.

An additional feature of the sockeye-fishing season in the Provincial waters of the Fraser system this year that occasioned comment was the size of the individual earnings of our fishermen. It has been stated that individually their earnings were greater this year than in any previous season. That is probably true, as the prices paid throughout the season were high and the catch larger. The price opened at 65 cents per fish in July, was advanced early in August to 80 cents, and later that month advanced to 90 cents. During September the price ranged from 80 to 85 cents up to the 20th and then dropped to 60 cents, and finally 45 cents for the balance of the season, which ended in October. As in September and October many of the fishermen caught from 200 to 400 fish per day for five days per week, for four or five weeks their earnings were large. In this connection it should be recalled that in the period 1909–16, inclusive, an average of 4,290 gill-net fishermen were yearly engaged in Provincial waters of the Fraser and that this year but 1,860 were so engaged, and that where formerly thirty-five canneries were operated on the Fraser, but nine were operated this year.

The Spawning Areas of the Fraser River.—The inspection of the sockeye-spawning areas of the Fraser basin this year were made, as usual, in August, September, and October. In addition to the information gained by personal observation, I am greatly indebted to Major J. A. Motherwell, Chief Inspector of Fisheries for the Dominion in the Province, and to many white and Indian residents in the Fraser basin, for much information of value.

The number of sockeye which spawned in the Fraser basin above Hell's Gate Canyon this year was the largest since 1913. For the first time since 1913 the number of sockeye which spawned in the upper section of the Fraser should materially increase the size of the run four years hence. The number of sockeye which passed through Hell's Gate Canyon in July and August this year was apparently small. The number which passed through that canyon in September and October, however, was greater than in any year since 1913. Water conditions at Hell's Gate throughout the entire season were exceptionally favourable for the passage of such sockeye as reached there. Throughout the water was low. At no time this season were salmon detained there. In consequence it was more difficult to gain an approximate estimate of their numbers. The large number of sockeye known to have passed through in September and October did not display themselves as freely at Hell's Gate as they did in the vicinity of Hope before they reached the Gate, and as they did after they had passed through the canyon and entered the Thompson River. It was not until the fish showed up in that river that it was appreciated how great their numbers were.

The Indians fishing at the rapids in the Fraser just above the mouth of Bridge River this year caught more sockeye than in many years. The water was extremely low and afforded the Indians unusually favourable conditions in September and October for the use of their effective dip-nets and gaffs. Major Motherwell placed a special officer there during the season to record conditions, especially the different stages of water, to estimate the number of sockeye which reached there and the number caught by the Indians. The record made shows that the number of sockeye which passed through the canyon in July was estimated at 360; in August, 1,615; September, 8,870; October, 1,170; a total of 12,015. It is recorded that the Indians during the season caught 1,419 sockeye and 767 springs. The sockeye were not delayed there at any time up to September 14th, and thereafter for only a day or two at a time. It will be recognized that the estimate of the number that passed through is little more than an approximation of the number which displayed their presence; however, it will be noticed that the number given agrees fairly well with the number which were later noted in the extensive tributaries, lakes, and streams farther up-stream.

Throughout the season no sockeye were observed to enter Quesnel Lake. There has been no obstruction at the outlet of that lake since the dam and fishway were removed some years ago. The fish which now reach there can easily enter the lake without displaying themselves. In September some five or six hundred sockeye are reported to have reached the upper stretches of the Horsefly River, one of the two largest tributaries of Quesnel Lake, and some three or four hundred sockeye were observed in Mitchell River, the other large tributary, late in September and early in October. No sockeye were reported to have reached either of these tributaries

four years ago, but egg-plants were made there that year. Dominion officers hold the opinion that the sockeye which reached Quesnel this year are the product of egg-planting.

Reports made to Major Motherwell indicate that more sockeye passed up the Nechako to its lake tributaries than for some years, but the numbers were limited.

For the first time in some years a few hundred sockeye reached the Bowron Lake section, a tributary of the North Fork of the Fraser. Men engaged in constructing a new bridge over the river at the outlet of Bowron Lake in August reported that several hundred sockeye entered the lake that month, and they were later observed spawning in the river at the head of the lake. Very few sockeye were known to have spawned there four or five years ago.

Reports from the Chilcotin River section indicate that the number of sockeye which reached there this year was not up to the average of recent years, and the run in those years was small. Fishery Officer Hill estimated that the number that reached there this year was only about half that of last year. The Indians who fished at Fish Canyon and Indian Bridge caught less than five hundred, and very few are known to have reached Chilko Lake, the main source of the Chilcotin River.

No sockeye entered Seton Lake in July or August. A few hundred are known to have passed into the lake in September and October, a larger number than for some years. Very few spawned there four or five years ago, but egg-plants were made in Anderson Lake, at the head of that section, four years ago.

It is promising to note that a greater number of sockeye spawned this year in the Shuswap Lake section, at the head of the Thompson River, than in any year since 1913. Late in September and during October large numbers spawned in the lower reaches of Adams River and on the gravelled bars of Little Shuswap River. In company with Major Motherwell, J. A. Rodd, Superintendent of Fish Culture in Canada, and Fishery Officer Shotton, in charge of the Shuswap-Thompson section, I inspected the spawning-beds above mentioned in October. The gravelled stretches of Adams River from its mouth at the lake, for a distance of 5 miles up-stream, were closely covered by spawning and dead sockeye that had spawned. They were in greater numbers than I have seen them on the spawning-beds of the entire Fraser basin, above Hell's Gate Canyon, in any season since 1913. And in addition we saw large numbers of sockeye spawning in Little River, the outlet of Shuswap Lake, as we passed over its surface in a launch. All the gravelled reaches of the river's bed were crowded with spawning sockeye.

I estimated that we saw between three and four hundred thousand sockeye in the above waters. Major Motherwell, Mr. Rodd, and Fishery Officer Shotton, all experienced overseers, placed their number at between five and six hundred thousand.

The sockeye we saw in the Shuswap section were large and highly coloured fish—typical specimens of the races of sockeye which formerly spawned in the Fraser above Hell's Gate. They were much more highly coloured than the races of sockeye that spawn in the Fraser basin below Hell's Gate Canyon, and they were, with the exception of the sockeye which spawn in the Birkenhead River, at the head of the Lillooet-Harrison Lakes section, very much larger and longer fish. The races of sockeye that spawn in the Lower Fraser, which includes the Harrison, Lillooet, Cultus, and Pitt Lakes, are all small-sized fish, with the exception of those which spawn in the Birkenhead, at the head of Lillooet Lake, and none of them are nearly so highly coloured. The Birkenhead sockeye are as large as those found in any section above Hell's Gate, but they are not nearly so highly coloured when spawning. In consequence I am strongly of the opinion that the sockeye we saw in Adams and Little Rivers this year were the product of the fish which had spawned above Hell's Gate Canyon—that they were not the product of the sockeye which had spawned in the lower river sections.

In this connection it is interesting to refer to the spawning reports of four years ago, 1922—the brood-year of four-year-old fish of this year's run. Officer Shotton, who has had charge of the Shuswap Lake section for many years, in his report for 1922 wrote: "The run to my district this year surpasses any of the previous eight years. The run of sockeye was exceptionally good, there being two runs. The first run were large fish, many of which went to the spawning area of the Adams River. I am making a very conservative statement when I state that I saw six to eight thousand in Little River." In his report for 1922 Mr. Shotton gave no estimate of the number seen in Adams River that year. He now places their numbers at not less than twenty thousand.

A brief summary of the reports of 1922 from the tributary streams of the Shuswap section shows that the first sockeye reached Adams River on October 6th and was a light run. A second

run began on October 25th and was heavy. Sockeye in small numbers were also reported in Anesty, Eagle, and Salmon Rivers and other tributaries of Shuswap Lake. The run to all streams was reported as larger than for some years.

It is difficult to believe that the large number of fish we saw in Adams and Little Shuswap Rivers this year were the product of so limited a spawning in that section in 1922. It is equally difficult to credit them to the spawnings in other sections of the Upper Fraser basin in that year, or to attribute them to the planting of sockeye-eggs made in that section in the spring of 1923, which were collected from eggs gathered at Cultus Lake, in Lower Fraser, in the fall of 1922. The latter are all small fish.

Referring to the return from natural spawning, it is interesting to note that some light has recently been cast on the percentage of return from a known number of fish which spawned naturally. In 1921, under the direction of Dr. C. H. Gilbert, acting for the U.S. Bureau of Fisheries, a weir was placed across the Karluk River, on Kadiak Island, Alaska, and a count made of all the sockeye which passed through. Something less than one and a half million were counted as they passed through the openings of the weir that year, and they spawned naturally in the lake at the head of the river. The family of sockeye which runs in the Karluk River consists largely of fish that reach maturity and spawn in their fifth year, so that the sockeye that ran to that river this year were, with few exceptions, the product of the one and a half million fish which spawned in 1921. The run to the Karluk this year was again intercepted at the weir and the fish counted, and record made of the number of fish taken commercially. Under the Federal fishing regulations of Alaska, fishermen engaged in the Karluk River are restricted to catches of not to exceed 50 per cent. of the season's run. Under such conditions this year the combined weir count and the commercial catch up to September 15th, when fishing ceased, totalled over four million fish, a return from the spawning of one and a half million fish of four million. It is the first record from the natural spawning of a known number of sockeye.

Conditions in the lower section of the Fraser basin this year were as satisfactory as they have been in recent years.

The Birkenhead River, at the head of the Lillooet-Harrison Lakes section, maintained its record as the most abundantly stocked sockeye section of the entire Fraser River basin. It was again abundantly seeded this year. The run throughout the season was fully up to the average of any year since records were first made there. The size of the run to this section shows no sign of diminishing. It is the only section in which conditions are entirely satisfactory. The sockeye came in early and ran throughout September and into October. The fish were large and in prime condition. Over forty-three million eggs were taken for the hatchery, and the beds of the river were well seeded naturally. It was the largest egg-collection ever made there.

The sockeye runs to Cultus and Pitt Lakes and Morris Creek were equal to the average of recent years.

Summarizing sockeye-spawning conditions in the Fraser this year, I am of the opinion that the increased seeding of the Shuswap Lake section, and the normal seeding of the Birkenhead River and the lakes to the south, should produce an increased return in 1930.

I am indebted to Major J. A. Motherwell for the following statement of the sockeye-salmon egg collections made at Dominion hatcheries in the Fraser River basin this year:—

Cultus Lake Hatchery	6,442,285
Pemberton Hatchery	43,350,000
Pitt Lake Hatchery	5,044,000
Total	54,836,285

Respectfully submitted.

JOHN PEASE BABCOCK,
Assistant to the Commissioner.

THE SPAWNING-BEDS OF THE SKEENA RIVER.

Hon. William Sloan,
Commissioner of Fisheries, Victoria, B.C.

SIR,—In obedience to your instructions, I beg to submit the following report on the spawning-beds of the Skeena River for the year 1926:—

I left Prince Rupert on September 6th and visited Lakelse Lake the following day. This lake is the first important sockeye-spawning area and also the earliest of the Skeena watershed. It is a beautiful lake, 5 miles in length and approximately 12 miles from Terrace. A good automobile-road brings one within easy reach of Terrace. Cut-throat and rainbow trout are plentiful in the lake and excellent fly-fishing may be obtained during the season. A good hotel and well-equipped hot springs at the lower end of the lake are an added attraction which is increasing the number of sportsmen and tourists each year. A large and modern Dominion Government salmon-hatchery is located on one of the small creeks and is ably managed by C. T. Hearne, the Superintendent, and an efficient crew.

I met Mr. Hearne on arriving at the hatchery and was surprised to learn that he had then collected 15,000,000 sockeye-eggs, which was about 4,000,000 in excess of last year's record. This was the more surprising when one considers the fact that the sockeye-fishing on the Lower Skeena was similar to 1925 and can only be classified as fair. These eggs were at the time in process of being transported to the headwaters of the Fraser River, in an attempt to restock the depleted but once famous sockeye-river. The same number of sockeye-eggs, however, were gathered from the Fraser watershed at a later date and have now been delivered to Lakelse Hatchery.

Mr. Hearne informed me that the first sockeye were seen in the lake on June 12th, the same date as last year. A number of hair-seals were seen in the lake about the end of May, which would lead one to suggest that they had been following the sockeye. The depredations of the hair-seals are well known and some effective method should be utilized with a view to extermination of these salmon-snatching pests, or at least decreasing their numbers.

The hatchery crew commenced spawning early in August and had collected 15,000,000 sockeye-eggs by August 19th. The fences and pens at the mouth of the creeks were erected on July 19th and were all removed by August 26th, so that many sockeye undoubtedly passed on up the creeks to their respective spawning-grounds. Owing to the absence of snow during the previous winter all the creeks were in good shape. A heavy freshet during the spawning season, followed by a dry spell, generally results in a big loss of natural-spawned eggs. I was also informed there were many net-scarred fish, although on the whole the sockeye were slightly larger than average years. The males predominated and there were scarcely any "runts."

There are four sockeye-creeks on Lakelse Lake—namely, Williams, Schullabuchan, Granite, and Hot Spring Creeks—the largest and most important being Williams Creek. All four creeks were visited the following day, but, with the exception of Williams Creek, few sockeye were seen near the mouth of the creeks. Williams Creek has an immense spawning area, the creek being about 20 miles in length, which is by far the longest sockeye-creek of the Skeena watershed. Many sockeye were seen in the lower reaches of this creek and a few fresh arrivals were jumping in the lake near the mouth of the creek. Good runs, I am informed, were recorded in the other three creeks, and from all reports were much better than last year. Lakelse River, the outlet of the lake, was alive with humpbacks, the upper 5-mile stretch being one teeming mass of this variety.

In summing up the Lakelse spawning area, which will be well seeded this year and will compare favourably with any former year, it is evident that there are two main factors in the well-stocked spawning-beds. The principal one is, of course, the forty-eight hours of a "close season" and the fact that an early run takes place before the sockeye-fishing actually begins. This was quite evident early in June, many of the larger sockeye being caught in spring nets. When one considers the fact that there are approximately 1,100 boats fishing in the river during sockeye-time, it is surprising, to say the least, that any escape to seed the spawning-beds.

Returning to Terrace, I arrived at Topley on September 10th. I had previously gone into Babine Lake by way of Burns Lake, but I was informed there were no transportation facilities this year; hence the selection of Topley.

After outfitting, etc., I arrived at Fulton River, on Babine Lake, on the night of the 12th, and on the following day reached Babine Village at the mouth of the lake. A severe snow-storm next day made travel impossible, but on the morning of the 15th I made the trip down the 12-mile stretch of Babine River. It is on this stretch of water that the Babine Indians, approximately 100 families, catch their supply of fish. There are thirty smoke-houses along this stretch, each smoke-house with from three to four families, and all were busily engaged cleaning and sun-drying their latest catch. Each family is supplied with a new net every two years by the Dominion Government, as these Indians live solely on salmon for food. Their smoke-houses and racks were well filled and would average from two to three thousand per family. No complaints were received, which is a good indication as to the extent of the run to the Babine this year. Although one or two families commenced fishing as early as July 9th, it was not until August 30th that all the nets were out. I am informed by the Fishery Guardian that sockeye were first seen entering the lake on June 29th, and that there were two distinct runs to the lake before the Indians started fishing. There was an exceptional run of springs at the lower end of this stretch, but the humpbacks were not so plentiful as in other years. On the return up the river many sockeye were seen darting away at the approach of the boat, there being excellent spawning-beds near the lake.

Leaving Babine, I arrived at the Dominion Government Hatchery on the 16th. This hatchery is situated at the head of Hatchery Creek and is about 3 miles from the lake. It is one of the most important sockeye-creeks of the Skeena watershed, ideally situated, with an unlimited spawning area. I met Mr. Eaton, the Superintendent of the hatchery, who informed me that sockeye were in the creek as early as June 17th, but that the first real run did not take place until about August 15th. Mr. Eaton and his assistants commenced spawning on September 9th, but little progress was made owing to about 75 per cent. of the sockeye being still "green." The pens erected at the head of Hatchery Creek were one seething mass of sockeye, and Mr. Eaton did not anticipate any difficulty in obtaining his quota of 8,000,000 eggs for the hatchery. The sockeye were big in size, with the males in excess of the females by about seven to one. There was a good showing on the spawning-beds all down the creek for a distance of 2 miles and many were seen breaking water in the deep pools. Hatchery Creek is one of the best all-round sockeye-creeks of the Skeena watershed and it has yet to record its first failure as a sockeye-producer.

Leaving the hatchery on the morning of the 18th, I arrived at Donald's Landing, 25 miles from the head of the lake, that night. A severe snow-storm with a strong northerly wind nearly swamped the boat before the landing was made that night, incidentally soaking the blankets and food. The storm continued for three days and I was unable to go to the upper end of the lake to visit 15-Mile and Beaver Creeks. The Dominion Fishery Guardian, who patrols the upper end of the lake, reports that there was an exceptionally good showing of sockeye in 15-Mile Creek and that Beaver Creek was good and up to the average. With regard to Beaver Creek, it is interesting to note that, although Babine Lake is approximately 113 miles long, Beaver Creek, at the extreme head of the lake, is the earliest spawning-creek.

Getting an early start on the morning of the 22nd, I called in at Pierre Creek. This also is a good all-round sockeye-creek, having about 2 miles of ideal spawning-grounds. This also is an early-spawning creek, the bars for some distance being littered with dead and decaying fish. Many sockeye were in the pools and on the numerous gravelly patches, however, and it was plainly evident there had been a big run up this creek.

The following day I visited Fulton River, the largest creek flowing into Babine Lake. This creek flows from Fulton Lake, 5 miles distant from Babine Lake. Two waterfalls, one with a sheer drop of 40 feet, confine the sockeye to the creek. The sockeye were literally in thousands in this creek, the shallow gravelly patches showing up like a dense mass of red. A good number of "runts" or grilse were seen, but even at that the average in size was good. It was hard to determine the proportion of sexes, but they appeared to be better balanced than the sockeye in the other creeks. Five Indian families were fishing in the lake near the mouth of the creek and had a fair supply of fish in their smoke-houses. At the time of my visit the sockeye were still running up the creek as the Indians were busily cleaning the previous night's catch. It is only during the night that the gill-nets can be operated on the lake, the nets being easily seen during the day by the wary sockeye. As this was the last point of interest on Babine I returned to Topley on September 24th.

In summing up the Babine area, I can say without the least hesitation that the spawning-beds will be well seeded this year. This was my seventh consecutive visit to the spawning-

grounds, and I found all the creeks, with two outstanding exceptions, well up to the average of former years. The two exceptions are Fulton River and Pierre Creek, which, as regards conditions, more than surpassed any of my previous visits, both as to quantity and quality of the sockeye. If the Skeena River cannerymen would visit the Babine spawning-beds during the month of September, I am sure they would return to their tasks the following year with renewed vigour, happier and contented men.

I arrived at Hazelton on September 25th and visited the canyon at Agwillgate the same afternoon. This canyon on the Bulkley River is a little above the junction of the Skeena and Bulkley Rivers, and was in years gone past the meeting-place of all the Indians of Upper Skeena during the salmon run. Some decrepit old smoke-houses still remain as if in mute testimony of what must have been a busy scene in days gone by. As the canyon is very narrow the water rushes through and over a small fall, and it was when the salmon were making this little jump that they were caught by the Indians with both spear and basket. Few are caught at this point nowadays as these Indians follow more the white man's mode of living than that of their ancestors. From all reports there was a good run of sockeye to the Bulkley River, which will be well seeded and up to the average of former years.

Kispiox River, which joins the Skeena a few miles above Hazelton, is exclusively a humpback-river, but the run of this variety was poor this year and away below the average.

As this concluded the inspection of the spawning-beds, I left Hazelton on September 26th and arrived at Port Essington that afternoon.

I wish to express my appreciation to the Hatchery Superintendents and Fishery Guardians for hospitality shown and information supplied.

I have, etc.,

ROBERT GIBSON,

Fisheries Overseer.

Port Essington, B.C., October 30th, 1926.

THE SPAWNING-BEDS OF RIVERS INLET.

Hon. William Sloan,
Commissioner of Fisheries, Victoria, B.C.

SIR,—I have the honour to submit my report upon the inspection of the spawning-beds at Rivers Inlet for the year 1926.

The delay which occurred at Smith Inlet, due to the low stage of the lake, prevented my reaching the spawning area at Rivers Inlet until October 13th, circumstances that precluded the observation of the early-running salmon-streams at the head of the lake, when the fish were actually engaged in spawning, but evidence was not lacking to show that an exceptional run of sockeye had returned to the beds prior to my visit. The Indian River, situated at the extreme left, contained a run of sockeye very much in excess of that which was reported in 1921–22, according to hatcherymen who had visited this tributary during September, the height of the run. The spawning-beds were lined with spawning fish right up to the falls. Dead bodies which covered the bars bore testimony to this gratifying improvement in the run, as compared with the brood-years. There is a log-jam forming near the mouth which should receive attention, or in time will work to the detriment of the spawning-beds.

A great improvement was shown in the run of sockeye to the Cheo River, as was evidenced by the innumerable carcasses which littered the spawning-beds right up to the log-jam. Although too late to see the peak of the run, by digging down into the gravel at various points sockeye-eggs in abundance were disclosed, while the upheaval of the bars caused by the spawning fish was of such an extensive nature that no doubt need be feared of the final outcome when the sockeye return as adults from the seed deposited this year.

The condition of the Washwash River, lying over on the extreme right, is in a deplorable state. Log-jams cover the whole width of this stream near the mouth, so that it is a wonder the salmon are able to find their way on to the spawning-beds above. In order to find an outlet to the lake the main river has been forced into innumerable small streams and is eating its way gradually into the banks in towards the Cheo, a situation that demands attention from the authorities. Late as the spawning season was at this time, sockeye salmon in an advanced stage of spawning were noted in favourable numbers making use of the gravel-beds below the log-jams. Farther up above these obstructions a few sockeye were seen, and in employing the same methods as applied to the Cheo I found that, in digging down into the gravel, eggs in abundance were brought to view. These favourable indications, coupled with the reports that this river was full of salmon earlier in the season, ensure a big return from the seed deposited. For the improvement shown in the three tributaries at this point credit is due to the energetic manner in which the hatchery officials endeavoured to bring the spawning-beds back to fertility. In 1922 they planted about 1,015,000 eyed eggs, together with 1,320,000 fry from seed collected during the spawning season of 1921. In 1923 the same methods were adopted, and, in the very satisfactory condition of all of them this year, the restocking which is now being carried out each year is without doubt going a long way towards counteracting influences which have in the past done such harm to the spawning-beds.

Returning from the headwaters, I examined Sunday Creek, a small stream situated near the Narrows, and from the number of sockeye spawning here there should be a very fair run from the seed planted this season. The males and females were about equally divided and were of exceptional size.

The spawning-beds at the Narrows contained a fair run of both cohoe and sockeye. The Indians were obtaining their winter's supply from this source and had nearly completed their requirements. The run closely resembled the return in 1921–22.

The spawning-beds of the Sheemahant River, unlike the unsatisfactory conditions noted in the brood-years, showed a great improvement in the number of sockeye that reached them. From the mouth up for many miles large numbers were seen spawning on the riffles just above each rapid, while all the side-streams adjacent to the river contained their full quota of salmon, busy spawning. For this improvement in the run the good work of the hatchery is again responsible. To make up for the impoverished condition of the spawning-beds in 1921–22 they planted no less than 4,400,000 eyed eggs. In carrying out this work it is necessary to plant the eggs when the rivers are at their lowest stage, generally between January and February.

It entails a great deal of labour, but from the results that are manifest it is worth the trouble. The sockeye were unusually fine specimens of the race, the males outnumbering the females in the proportion of about two to one. No log-jams or other obstructions interfered with the movement up-stream.

In making the inspection of Jeneesee Creek, a small stream about 1½ miles in extent, it was satisfactory to note that the run of sockeye compared very favourably with the remarkable showing last year. In 1921 a big run returned, while in 1922 unsatisfactory conditions prevailed. The inference to be drawn from this is that the run this year consisted mainly of five-year sockeye, but in submitting the following figures courteously supplied by Mr. Tingley, Superintendent of the Dominion Hatchery, we have probably the answer to one of the most prolific runs of sockeye that Jeneesee Creek has ever received. In the brood-years the spawning-beds were planted with 1,626,000 eyed eggs from the hatchery and supplemented by 3,951,000 young fry. A freshet which occurred prior to my visit permitted thousands of sockeye to pass over the hatchery fence, but so great were they in numbers that men at the camp had no difficulty in collecting all the eggs that were necessary for their requirements at the hatchery. In size they represented a fair average, the males outnumbering the females two to one.

The Machmell River was again too discoloured to arrive at a satisfactory estimate of the run of sockeye, but a trapper who was engaged in building a cabin close to the river stated that during the past month at certain stages of the water he noted many sockeyes spawning, so that it is evident they do make use of the spawning-beds here. The Nookins River, flowing into the Machmell about half a mile from the entrance, contained a run of sockeye equal in extent to that which returned in 1922, the spawning-beds being covered with spawning fish right up to the rough water 4 miles distant. In the side-streams the same conditions prevailed. No log-jams were to be seen with the exception of one about 2 miles up, but this presented no difficulty to the salmon finding their way to the spawning-beds beyond. The fish were a fair average in size, the proportion of males and females being about equally divided.

Asklum River, which is situated about 12 miles from the mouth of the lake, was inspected under ideal conditions, the low stage of the water providing an uninterrupted view of the spawning-beds, 5 miles in extent. The run of sockeye closely resembled the numbers that returned in 1921 and 1922, but as I was rather late in arriving it is possible that a big run of fish had come in and spawned out prior to my visit; the condition of the gravel-bars bore testimony to this, as they were covered with numerous pockets where the salmon had spawned. In digging down into the gravel, eggs in large numbers were uncovered. The fine showing of salmon seen on the beds at this time, coupled with the large numbers that had spawned out earlier in the season, ensures a big return four and five years hence. The river was clear of obstructions right up to the falls; therefore the fish had no difficulty in finding their way up-stream. The males predominated over the females in the proportion of about two to one.

Making camp at Quap, I examined the spawning-beds at the Dalley River first. It is situated directly opposite on the other side of the lake and comprises spawning area of about 4½ miles in extent. This river rarely fails to receive its full complement of sockeye and had not this year fallen behind in that respect. The spawning-beds were lined with fish, the greater proportion in the last stages of spawning. Thousands of carcasses lying on the bars testified to an exceptional run earlier in the season. The run compares very favourably with the fine showing seen here in 1921 and 1922, the brood-years from which the present run resulted. They were a fair average in size, the males and females about equally distributed. No log-jams were to be seen.

The men at the camp at Quap River were busy spawning and had nearly completed filling the hatchery with eggs. No difficulty had been experienced in making the collection, due to the abnormal run that had returned. The freshet which had caused so many sockeye to escape above the fence at Jeneesee created the same conditions here. In passing up through to the headwaters above 5 miles distant, sockeyes in dense masses lined the beds, while schooled up in the deep pools thousands waited; below the fence and out in the bay there seemed to be no diminution in numbers. The scene is a repetition of the vast numbers that have returned to this river in the last few years.

The spawning-beds at the Hatchery Creek contained their full quota of sockeye and came well up to the average of former years. They were fine specimens of the race, averaging in size larger than the runs that had been noted on the other tributaries of the lake.

The spawning-beds surrounding the Indian rancherie and in the upper portion of the Owikeno River received a run of sockeye this year comparing with the unexampled return last year, providing the Indians with all they required for their winter's need. In passing down through the rapids to the mouth, spring and chum salmon could be seen spawning in great numbers.

In summarizing the results of the inspection of the spawning-beds at Rivers Inlet, I am of the opinion that the favourable conditions which were noted on all the tributaries, especially those at the head of the lake, showed clearly that a run of sockeye of greater proportions returned to the inlet than was the case in 1921 and 1922. Not only did the packers put up a larger pack, amounting to about 70,000 cases, but the spawning-beds showed a corresponding increase. Since the spawning-beds in the brood-years contained a run of only moderate proportions, it must be assumed that in assisting the natural spawning by replenishing the rivers and creeks with millions of eggs from the hatchery, added to which millions of young fry are turned loose into them each year, the Dominion fishery authorities have at last found a solution to the difficulty of ensuring an increase in the run of sockeye each year.

In conclusion, I wish to express my thanks to the management of the B.C. Fishing and Packing Company; to Mr. Tingley, Superintendent of the Dominion Hatchery; and to the men at the camp for courtesies extended.

Respectfully submitted.

ARTHUR W. STONE,
Fisheries Overseer.

Rivers Inlet, B.C., November 15th, 1926.

THE SPAWNING-BEDS OF SMITH INLET.

Hon. William Sloan,
Commissioner of Fisheries, Victoria, B.C.

SIR,—I have the honour to submit my report upon the inspection of the spawning-beds at Smith Inlet for the year 1926.

Taking into consideration the record number of boats fishing at this point during the fishing season, it was doubtful whether the inspection of the spawning-beds would disclose conditions detrimental to such intensive operations, but, strange as it may seem, such was not the case. The escapement to the spawning-beds showed an improvement in comparison with the runs which returned in 1921–22. This favourable condition was partly due to a larger run of sockeye, as was evidenced by an increase in the pack—namely, 20,000 cases—as compared with the packs put up in the brood-years, and partly to the great number of fishing-boats spread all over the inlet, breaking up the schools of salmon in such a manner that it was a rare occasion a fisherman was lucky enough to make a big haul at any one time; the fish, becoming scared, swam deep and avoided the nets. To such an extent did this happen that many of the fishermen were of the firm opinion that no harm would be done if the close season was eliminated, providing of course rigid observance of the fishing boundary was maintained, but such a drastic step could not be contemplated, since it would not be to the interests of conservation.

On being informed that Long Lake, the breeding-ground of the sockeye salmon, was at an extremely low stage, it was not considered advisable to make the inspection until it had risen sufficiently to permit of the fish reaching the beds. It was therefore not until September 27th that a move was made in this direction. Making camp at the foot of the lake, I examined the Docee River (the overflow to the lake), and am able to report a fine run of springs; in the clear water hundreds could be seen spawning and also along the shore-line at the mouth. The run of this species of salmon is in striking contrast to the poor showing last year. Intermingled with the springs, schools of cohoe salmon were observed.

The heavy rainfall that occurred at this time made travelling very uncomfortable, and on arriving at the head of the lake we were glad enough to make camp and dry out. The Geluch River had in the meantime rapidly risen, a situation which compelled us to remain in camp until it had subsided. When it was possible at last to see the spawning-beds under favourable conditions I was agreeably surprised to find the beds, from the mouth up to the falls, covered with sockeye salmon in dense numbers, all more or less in the green stage, evidence that they had only just come in. The small streams adjacent to the river were not productive, on account of bars thrown up by former freshets preventing the salmon from gaining entrance; in one instance, however, where a fresh stream had been formed, thousands of sockeye lined the beds. The fish were a fair average in size, the males and females being about equally represented. No log-jams or other obstructions interfered with the movement up-stream.

Outside along the shore-line at the head of the lake, schools of sockeye salmon were still waiting to go on the spawning-beds, which, combined with the big run that had already taken possession of the beds inside, should provide a run of salmon equal in all respects to that which returned in 1922. In 1921, it will be recalled, the run of sockeye to this river was very unsatisfactory.

The Delebah River, situated about 2 miles from the head of the lake, contained a run of sockeye equal in extent to the fine showing that returned in 1922. Schooled up in great numbers just inside the river, the fish seemed in no hurry to commence spawning; farther up the gravel-beds were literally alive with spawning fish all in an advanced stage of spawning, while outside at the entrance and in the bay thousands upon thousands waited. I have no hesitation in predicting a big return from the eggs which will be deposited this season from this river. A log-jam, to which I referred last year, is assuming greater proportions and should receive attention, or will with each succeeding freshet act to the detriment of the spawning-beds. In size the sockeye were similar to the run observed at the Geluch River, the males and females about equal in numbers.

The restricted spawning-beds at the Quay Creek contained a fair run of sockeye, not quite as large as the return in 1922, but far in excess of the 1921 run. Males predominated over the females in the proportion of two to one and were a fair average in size.

A few cohoe salmon were observed breaking water as we returned down the lake, and on reaching the Docee River once more a big run of these fish had come in. Reports received from the seine fishermen showed that the run of cohoe was larger than usual. The humpback run was a failure, being the poorest known in years. Chum salmon, on the other hand, were caught in very large numbers and encouraged the packers to keep open their plants two weeks later.

In summing up the results of the inspection of this watershed, I am of the opinion that the fine showing of sockeye on the spawning-beds will be reflected in a big return four and five years hence from the seed deposited this season. With the large and increasing number of fishermen operating on the inlet each year, it is not to their interests to indulge in illegal fishing. The spawning-grounds are of such a restricted character that, unless conservation is practised unremittingly, they are bound to suffer in time, with a consequent loss not only to the canners but to the fishermen themselves.

Respectfully submitted.

A. W. Stone,
Fisheries Overseer.

Rivers Inlet, B.C., November 15th, 1926.

THE SPAWNING-BEDS OF THE NASS RIVER.

Hon. William Sloan,
Commissioner of Fisheries, Victoria, B.C.

SIR,—In obedience to instructions received from the Department to inspect the salmon-spawning areas in the Meziadin watershed of the Nass River, I have to inform you that this duty has been fulfilled and beg to submit the following report:—

As in previous years, it was arranged that I should join forces with the Dominion Fishery Officer in making an inspection of this watershed. Upon my arrival at Stewart I met Mr. A. E. Young, who was again detailed for this work by the Department of Marine and Fisheries. We proceeded to make provision for pack-horses, prepare our outfit, and engage two capable assistants for the trip. After this was accomplished we left Stewart on September 8th and arrived at the head of Meziadin Lake on the 11th. We found the trail in very poor condition, being badly overgrown with brush. All of the bridges need repairs as the puncheon in them is rotten, the horses continually breaking through when passing over. Upon our arrival at the head of Meziadin Lake we found that the Dominion Fisheries Department's canvas canoe had received bad usage since we put it away last fall, and we had difficulty in again making it seaworthy. It is not to be expected that the canoe will be in good enough condition to use next season. After getting the canoe in shape we inspected the sockeye-spawning grounds at the head of the lake and for 5 miles down on each shore-line. Spawning sockeye were to be observed at many places, but they were not congregated in large numbers. The salmon appeared to be those of an early run and were in an advanced stage, which showed that they had been in the lake for a considerable period. There were four or five males to every female.

Having completed this inspection at the head of the lake, we left for the Meziadin Falls and arrived there in the evening of September 15th. On our journey down the lake very few fresh-run salmon were to be seen leaping as is usual, and there was little sign of salmon at the mouths of Hanna River and McLeod Creek.

On arriving at the falls in the Meziadin River, where the fishway is located, we were disappointed in finding very few salmon of any kind congregated below. There were not more than ten or fifteen in the pools of the fishway at any one time and they were passing through very slowly. At the time of our first observations at the falls there appeared to be about 100 or 150 below the fall on the far side. These were salmon of an early run. The fresh run of sockeye which usually arrive at the time of our inspection were very few in numbers and no improvement was noticed during our ten days' stay. The fresh-run sockeye were in splendid condition and were of large size, measuring from 28 to 30¾ inches in length. In comparing conditions at the falls with last season, the number of salmon was very small. During the 1925 season the basins of the fishway were full all the time, the fish passing through continually. This condition prevailed during the whole of our stay, the basins each holding about 200 salmon, while this season only a few salmon were assembled, and at the time of our departure most of the salmon which had reached the fall had passed through the fishway.

While at the fishway I obtained scales, measurements, etc., from forty-four sockeye taken from the Meziadin River, and also fished a net in the Nass River, 2 miles above the outlet of the Meziadin River. The results obtained from the operations in the Nass River were disappointing. The net was fished continually for eight days, with the following results:—

	Sockeye.	Cohoe.
September 18	2	2
September 19	1	....
September 20	3	....
September 21	2	1
September 22	2	1
September 23	....	....
September 24	....	....
September 25	1	....
Totals	11	4

The water in the Nass was very low at this time. Had there been an average run of salmon above the Meziadin watershed, these operations would have shown far better results. In taking the scales and measurements great care was used so that the salmon in most cases were liberated alive and uninjured.

On Sunday, September 19th, we inspected the spring-salmon spawning-beds, which are situated at the foot of the McBride Rapids in the Meziadin River, about half a mile below the outlet of the lake and 3½ miles above the falls. Observations show that the run of spring salmon to this watershed was on an average with past seasons. I had received instructions to obtain specimens of trout from the Meziadin, and while there caught thirteen specimens, preserved them in formalin, and duly forwarded them to Dr. W. A. Clemens, Pacific Biological Station, Nanaimo. To show the depredations these trout make on the spawning-beds, I opened one trout and in its stomach found sixty-five spring-salmon eggs. These eggs were in an advanced condition, clearly showing the well-formed young fish. In fishing for trout at this place they are so numerous that when you pull one in several more are to be seen following it to the surface of the water. If other trout consume eggs as the one examined the toll on spring-salmon eggs must be enormous.

The run of cohoe to the Meziadin this season was noticeable by their absence. There were only a few to be seen and these were mostly small-sized fish and runts. At the time of our departure from the fishway there was no improvement in the cohoe run.

The fishway is in splendid condition, the crib-work, basins, and cement-work being in perfect shape. During our absence since last fall a large growth of bushes had taken place between the logs of the crib-work. These we cleared out, leaving the fishway in its original condition.

After completing our work at the Meziadin falls we started our return journey on September 26th, arriving in Stewart on September 30th.

Summary.—In making a summary of conditions found on the salmon-spawning beds in the Meziadin watershed of the Nass River, I have to submit that there was not a satisfactory escapement of sockeye to this district. From observations taken at the head of the lake there was a fair run of sockeye during the earlier part of the season. The late runs of sockeye at the mouth of the Nass at the canneries are in appearance distinguishable from those of the earlier runs. While some salmon from this run were to be seen below the falls, their numbers were anything but encouraging.

The cohoe run to this watershed did not materialize up to the time of our leaving, September 26th, and it is not to be expected that they would come through in quantity after that date. From previous observations cohoe are arriving early in September and continue during the time of our inspection. This season their numbers were few.

The run of spring salmon should be on an average with past seasons, and it would be much larger if the trout did not make such a heavy toll on the spawn deposited. It is apparent from the trout examined and mentioned earlier in this report that they not only wait behind the salmon when the eggs are expelled, but also rob the nests when deposited.

The stage of water during the time of our visit was below normal.

Respectfully submitted.

C. P. Hickman,
Inspector of Fisheries.

THE FOOD VALUE OF SOME BRITISH COLUMBIA FISH.

By John Pease Babcock.

It is the purpose of this paper to give in simple terms a brief digest of our present knowledge regarding the nutritive value of some of our most commonly used food-fish. The facts here recited are drawn wholly from a recent publication of the United States Bureau of Fisheries on the "Nutritive Value of Fish and Shell-fish."*

Human food-supplies, as a whole, should furnish enough digestible organic foodstuffs to meet the body's needs for energy; sufficient proteins; and enough vitamins. The bulk of most staple foods consists of carbohydrates, fats, proteins, minerals, and vitamins. With the exception of carbohydrates, all are abundantly contained in fish and shell-fish.

The sea, Clark and Clough, in the above-named bulletin, tell us, is not merely an expanse of water, but may be likened to productive fields of land—it is alive. Its green plants, microscopic or otherwise, are built up into organic matter in the forms of vegetable products. They in turn are eaten by lower forms of animal life, and they too support higher forms; and finally man utilizes some of the links in the chain, such as seaweeds, shell-fish, and fish. Ultimately all fish in the sea are dependent for their stores of energy upon sunlight, which is originally fixed by green plants. The fishes, like domesticated animals and birds, transform raw material into human foods. The human body is built up out of the foods eaten; it maintains itself in the same way, and makes good its losses and eliminates all waste products. In other words, it is a transforming machine for the production of form and energy. The human body is a super-machine in converting foods into body-heat and work that is nearly 100 per cent. perfect. All other machines are far behind in efficiency.

Chemists who, after years of study, have determined the fixed value of foods use a common unit in their measurements which they term the "calorie." A calorie is the amount of heat necessary to raise the temperature of 1 lb. of water 4° F. The human body to create energy changes the stored energy in foods into heat to keep the normal temperature of 98.6° F.

Many foods, particularly fish, contain larger amounts of so-called protein and fat types of food material than do carbohydrates types (starch and sugar), which so characterize vegetable foods. Fat and oil have the highest food value. They are the most concentrated forms of energy. They supply the quickly burned fuels of the body, while the proteins play a particularly important part in replacing losses from wear and tear of body-cells. Both proteins and nitrogenous constituents of foods, and the carbohydrates, or starch constituents, have the same fuel value—namely, 1,860 calories per pound. On the other hand, fats have a food value of 4,220 calories per pound. In addition to the proteins, fats and starches, which constitute by far the greater proportion of our foods, there is another highly important food essential—namely, the inorganic matter commonly given in food-value tables as "ash." All living matter contains ash. In bones and teeth the ash content is very high. Because human bodies can neither be built nor function without inorganic substances, our foods must contain them. Fish and shell-fish contain unusually wide ranges of mineral elements.

The pioneer work on the composition of North American food-fish was performed by Professor W. O. Atwater for the United States Bureau of Fisheries between 1880 and 1887. His work is a classical piece of research on the composition of certain classes of food material that has not been surpassed in completeness and thoroughness by any investigator on fishery products. He gives a highly condensed summary of the composition of the edible portions of over forty of the most common of American fresh fish.

* Document No. 1000.

The following taken from his tabulation gives the composition of the edible portions of some of the most common fishes consumed in British Columbia:—

Name.	Total Solids.	Fat.	Protein.	Ash.	Fuel Value per Pound.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Calories.
Salmon	36.4	17.8	17.8	1.1	1,080
Halibut	24.6	5.2	18.6	1.0	565
Herring	27.5	7.1	19.5	1.5	660
Cod	17.4	0.4	16.5	1.2	325
Eulachan	25.3	11.2	13.2	1.4	718
Smelt	20.8	1.8	17.6	1.7	405
Sturgeon	21.3	1.9	18.1	1.4	415
Trout	22.2	2.1	19.2	1.2	445
Flounder	15.8	0.6	14.2	1.3	290
Whale-meat (mammal)	28.8	4.2	23.1	1.2	607

The above shows that there is a considerable variation in the composition and food value of our fish. Salmon heads the list with a percentage of fat of 17.8, 17.8 of protein, and has a fuel value of 1,080 calories per pound. Eulachan ranks second with 11.2 per cent. of fat, 13.2 per cent. of protein, and has fuel value of 718 calories per pound. Herring ranks third with 7.1 per cent. of fat, 19.5 per cent. of protein, and 660 calories. Cod has 0.4 of 1 per cent. of fat, 16.5 per cent. of protein, and 325 calories. Flounder has 0.6 of 1 per cent. of fat, 14.2 per cent. of protein, and 290 calories.

Most more recent investigators point out one difficulty in drawing general conclusions from Atwater's tabulations. He apparently analysed but one or two samples of different species of fresh fish. Clark, Clough, Dill, and others found great variation in the composition of the same kinds of food-fish, due to several factors. They found that individual fish in the same school and caught at the same time often differed widely in composition and they ascribed it to the greater success of some fish in securing a greater amount of foods. Then, too, there is the important factor—namely, the proximity to the time of spawning. Dill and Green checked the important Pacific food-fish and showed seasonal variations in food and values, generally in the tendency towards an increase in fat content from spring to fall, due to the recognized fact that fish feed and grow more rapidly in summer than in winter months. Green showed also that spring salmon (quinnat) during the spawning migration suffer deterioration, particularly as regards fat content, and to a lesser extent in protein. The flesh of the salmon is gradually depleted of fats and proteins in the development of its eggs and milt and by its exertions in its spawning migration. He determined the flesh-tissue of the Columbia River spring (quinnat) salmon at different dates and different distances from the sea during their migration, and gives them as follows:—

Where taken.	Date.	Total Solids.	Fat.	Protein.	Ash.	Organic.
		Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Tidewater	Aug. 15–20	36.83	16.43	16.97	0.90	2.48
100 miles from sea	Aug. 5–7	37.32	17.17	16.88	0.89	2.49
210 miles from sea	July 11–31	36.64	16.33	17.01	0.95	2.49
700 miles from sea	Sept. 6–11	31.02	10.73	16.31	1.00	2.94
Spawning-grounds	Aug. 25–28	20.32	2.63	13.71	0.94	2.99

The above evidences the fact that the food value of fresh salmon depends largely upon the time of year they are taken and the place where they are caught. Their food value deteriorates rapidly after they enter fresh water, for the well-known reason that they cease feeding and are subject to great exertion in their ascent of the rivers, and at the same time are developing their eggs and milt.

Not only is there great variation in the seasonal value of the flesh of salmon, but in different parts of the same fish the flesh varies in richness. In the case of both red- and white-meated spring salmon it has been shown that slices taken near the head of some fish were 100 per cent.

richer in fat content than the slices taken near the tail of that fish. That is why the discriminating buyer, the price being equal, demands cuts from the head end of the salmon.

It has often been stated that the Columbia River spring (quinnat) salmon are richer and finer in flavour than those taken from any other waters on the coast. Clark and Clough, however, found that the spring salmon taken in Puget Sound waters averaged about the same as those taken in the Columbia. They also developed the fact that the white-fleshed spring salmon of Puget Sound compared favourably with the red-fleshed spring salmon when taken at the same time and at the same place, and showed little or no differences in fat content. They state, however, that more work is necessary to conclusively prove that the colour and food value have any necessary relation.

As to the relative food value of our five species of salmon, it has been shown that our cheaper grades—the pink and the chum salmon—usually contain less fat, but that *they are equal to the spring and the sockeye in protein—tissue-building material*—which is the most essential and valuable constituent in fish and shell-fish.

Referring to canned-fish products, we are advised that in the case of the salmon there are few changes in the processing except the addition of salt. On the other hand, in the case of sardines and other fish in which olive or other oil is added, the food value is increased in calories but not in protein.

Clark and Clough, in dealing with the food value of frozen fish, reached the conclusion that the process of freezing and storage of fish in cold rooms is one in which there is no appreciable change in quality or food value. Regarding salt fish, we are advised that fundamentally the salting of fish results in the elimination of water. Whether fish are dried naturally or salted, the effect is the same. Because a considerable proportion of the water is removed by salting or drying, salt fish like cod and smoked herring are highly concentrated forms of protein—body-building. In the case of smoked herring there is the additional advantage of a high percentage of fat. Salt cod does not gain much in food value from its fat content, but it has a percentage of 26.3 per cent. of protein and a fuel value of 502 calories per pound.

Generally speaking, the food value of shell-fish is not as high as fish-flesh, for the reason that they do not contain very much fat. On the other hand, this class of sea-food contains some carbohydrates, or starchy types of nutrients, which is unusual in other sea-foods, and they contain considerable quantities of protein, and their delicate and unusual flavours add variety to the diet and whets the appetite. The following table gives the composition of the edible portions of some shell-fish:—

Name.	Total Solids.	Fat.	Protein.	Ash.	Carbo-hydrates.	Fuel Value per Pound.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Calories.
Fresh crab	22.9	2.0	16.6	3.3	1.2	415
Fresh clams	20.6	1.7	13.6	2.5	2.8	377
Fresh mussels	15.8	1.1	8.7	1.9	4.1	285
Fresh oysters (eastern)	13.1	1.2	6.2	2.0	3.7	235
Fresh shrimps	22.7	0.4	19.3	1.5	1.7	407

In order to appreciate the real significance of fish and shell-fish in the diet it is necessary to make some comparisons in highly condensed form between the composition of fish and that of animal and vegetable foods. It has already been shown that the great value of fish is their content of protein. Some fish contain as much or more fat than meat, but generally they do not. Fish do, however, compete with meat in the dietary on the basis of cost of the protein involved. The tabulations contained in the bulletin from which we quote make comparisons between different fish, animal, and vegetable food products on the basis of cost which are too long and complicated to be used here, though they serve a very useful purpose in making comparisons of the cost of protein content, the essential ingredient, and by which it is shown that fish compare well with meat products in the matter of protein. And they show that where fuel value is considered it is lowest in the case of vegetable products like wheat, corn-meal, potatoes, etc.

The United States Bureau of Fisheries Document No. 1000, from which the foregoing has wholly been compiled, is a most valuable summarizing of present knowledge regarding the

nutritive value of fish and shell-fish foods. The various chapters it contains were prepared by scientists qualified to write on the subject, and who show that fish and shell-fish furnish an excellent supply of very valuable proteins and fats, and as a source of certain vitamins and minerals they are of great importance and should be given their proper place in the diet.

We cannot do better, in concluding this brief review of the "Nutritive Value of Fish and Shell-fish," than to quote the following paragraphs from Dr. Eugene Lyman Fisk, Medical Director of the Life Extension Institute:—

"Fish is interchangeable with meat. It has, for the most part, the same deficiencies as meat —that is, lack of vitamins and minerals—but as a source of protein it is quite the equal of meat and, in fact, more digestible than most foods we use in a mixed diet.

"There is a slight difference in favour of most fish as compared to most meat. The notion that fish is incompatible with other types of food, such as milk, is pure superstition. Fish can be safely eaten with other kinds of food by the average individual. There is, however, no mysterious, peculiar virtue in a fish diet. It does not make more brain, nor is it a good substitute for meat, where meat is undesirable, as in some forms of disease. There is plenty to be said in favour of a larger use of fish, without ascribing to it any mysterious virtues which it does not possess."

PACK OF BRITISH COLUMBIA SALMON, SEASON 1926.

COMPILED FROM DATA FURNISHED BY THE B.C. SALMON CANNERS' ASSOCIATION.

Fraser River District.

Names.	Sockeyes.	Fancy Red Springs.	Standard Springs.	White Springs.	Bluebacks.	Steel-heads.	Cohoes.	Pinks.	Chums.	Grand Total (Cases).
B.C. Fishing & Packing Co., Ltd.	33,263	4,682	1,039	6,725	2,557	12	4,913	559	5,629	59,379
Gosse Packing Co., Ltd.	15,325	2,355	.....	3,795	10,292	28	8,847	11,262	47,730	99,634
Canadian Fishing Co., Ltd.	10,211	100	1,339	5,804	244	.....	2,440	12,418	18,726	51,282
Somerville Cannery Co.	6,119	.....	.....	1,893	.....	.....	2,910	5,521	10,519	*26,962
Great West Packing Co., Ltd.	8,702	564	475	1,591	558	.....	1,057	2,224	2,304	17,475
Glenrose Canning Co., Ltd.	9,978	2,009	220	361	85	.....	1,616	272	3,587	18,128
J. H. Todd & Sons, Ltd. (Esquimalt)	2,091	.....	.....	.....	.....	.....	.....	.....	.....	2,091
Totals	85,689	9,710	3,073	20,169	13,736	40	21,783	32,256	88,495	274,951

Skeena River District.

B.C. Fishing & Packing Co., Ltd.	17,386	4,072	975	1,010	.....	28	6,859	39,162	6,541	76,033
J. H. Todd & Sons, Ltd.	7,989	1,768	467	171	.....	.....	11,813	19,949	10,600	52,757
Anglo-B.C. Packing Co., Ltd.	13,196	3,450	714	194	.....	.....	1,417	24,117	1,770	44,858
Gosse Packing Co., Ltd.	8,703	426	187	64	.....	145	4,443	28,652	19,971	62,591
Canadian Fishing Co., Ltd.	7,252	709	107	105	.....	170	249	15,317	973	24,882
Wallace Fisheries, Ltd.	11,284	2,173	.....	.....	.....	.....	2,105	26,985	1,807	44,354
Cassiar Packing Co., Ltd.	4,723	69	.....	17	.....	25	306	11,538	787	17,465
Maritime Fisheries, Ltd.	2,974	710	73	95	.....	157	189	4,448	224	8,870
Somerville Cannery Co.	4,075	.....	.....	586	.....	49	1,460	18,876	11,081	*36,127
Skeena River Packing Co., Ltd.	4,778	.....	2,452	.....	.....	180	1,367	21,037	9,773	39,587
Totals	82,360	13,377	4,975	2,242	.....	754	30,208	210,081	63,527	407,524

Rivers Inlet District.

B.C. Fishing & Packing Co., Ltd.	23,206	.....	143	43	.....	.....	152	1,802	86	25,432
J. H. Todd & Sons, Ltd.	6,240	.....	.....	.....	.....	.....	170	519	31	6,960
Provincial Canning Co., Ltd.	5,646	.....	.....	.....	.....	.....	201	3,929	65	9,841
Anglo-B.C. Packing Co., Ltd.	6,848	.....	92	10	.....	.....	98	863	45	7,956
Canadian Fishing Co., Ltd.	6,735	.....	138	35	.....	.....	2,169	1,322	1,663	12,062
Wallace Fisheries, Ltd.	8,012	66	.....	8	.....	11	1,229	4,262	6,674	20,262
Standard Packing Co., Ltd.	20	.....	150	.....	.....	.....	3,267	118	3,163	6,718
Gosse Packing Co., Ltd. (Namu)	8,874	.....	.....	.....	.....	.....	.....	.....	.....	8,874
Totals	65,581	66	523	96	.....	11	7,286	12,815	11,727	98,105

* Estimated.

Smith Inlet District.

Canadian Fishing Co., Ltd.	7,256	.....	12	39	.....	.....	56	509	17	7,889
Wallace Fisheries, Ltd.	7,824	6	46	.....	.....	.....	23	81	9	7,989
Gosse Packing Co., Ltd.	2,841	9	.....	.....	.....	.....	85	99	5	3,039
Totals	17,921	15	58	39	.....	.....	164	689	31	18,917

Nass River District.

B.C. Fishing & Packing Co., Ltd.	3,825	2,442	395	241	.....	236	903	4,178	1,641	13,861
Anglo-B.C. Packing Co., Ltd.	5,589	1,462	191	189	.....	49	1,350	12,952	1,668	23,450
Canadian Fishing Co., Ltd.	2,311	39	21	12	.....	38	1,795	24,033	5,423	33,672
Wallace Fisheries, Ltd.	4,204	673	144	155	.....	52	226	9,652	6,660	21,766
Totals	15,929	4,616	751	597	.....	375	4,274	50,815	15,392	92,749

Queen Charlotte Islands District.

B.C. Fishing & Packing Co., Ltd.	2	.....	.....	.....	.....	.....	628	11,636	34,386	46,652
Gosse Packing Co., Ltd.	59	.....	18	.....	.....	.....	183	51,649	9,934	61,843
Canadian Fishing Co., Ltd.	.....	.....	.....	.....	.....	.....	138	11,667	53,375	65,180
Wallace Fisheries, Ltd.	2	.....	.....	.....	.....	.....	.....	47,610	.....	47,612
Maritime Fisheries, Ltd.	.....	.....	.....	.....	.....	.....	334	18,804	27,523	46,661
Lockeport Canning Co.	.....	.....	.....	.....	.....	.....	87	8,779	28,471	37,337
Langara Packing Co., Ltd.	644	.....	542	.....	.....	.....	2,346	29,334	14,531	47,397
Somerville Cannery Co.	1	.....	.....	.....	.....	.....	.....	21,033	99	*21,133
Totals	708	.....	560	.....	.....	.....	3,716	200,512	168,319	373,815

Vancouver Island District.

B.C. Fishing & Packing Co., Ltd.	6,744	230	.....	18	.....	.....	6,679	26,463	6,614	46,748
J. H. Todd & Sons, Ltd.	.....	1,016	.....	20	.....	.....	7,352	179	2,593	11,160
Gosse Packing Co., Ltd.	3,370	1,688	.....	84	.....	.....	9,038	261	27,718	42,159
Canadian Fishing Co., Ltd.	1,770	.....	89	27	.....	.....	5,799	11,474	26,003	45,162
Nootka Packing Co., Ltd.	.....	.....	.....	.....	.....	.....	1,890	1,143	37,498	40,531
Clayoquot Sound Canning Co., Ltd.	1,725	.....	.....	.....	.....	.....	1,179	1,403	5,906	10,213
Wallace Fisheries, Ltd.	3,524	742	294	.....	.....	.....	10,215	5,792	31,417	51,984
Quathiaski Canning Co., Ltd.	1,681	176	.....	57	641	3	200	17,429	1,096	21,283
Nitinat Canners, Ltd.	.....	.....	.....	.....	.....	.....	349	.....	19,793	20,142
Deep Bay Packing Co., Ltd.	259	100	226	.....	4,739	.....	483	11,109	9,915	26,831
Somerville Cannery Co.	5,997	.....	.....	455	.....	.....	8,367	10,860	5,830	*31,509
Totals	25,070	3,952	609	661	5,380	3	51,551	86,113	174,383	347,722

* Estimated.

PACK OF BRITISH COLUMBIA SALMON, SEASON 1926—*Continued.*

Outlying Districts.

Names.	Sockeyes.	Fancy Red Springs.	Standard Springs.	White Springs.	Bluebacks.	Steel-heads.	Cohoes.	Pinks.	Chums.	Grand Total (Cases).
B.C. Fishing & Packing Co., Ltd.	11,700	248	508	78	.....	165	7,878	39,157	9,487	69,221
Anglo-B.C. Packing Co., Ltd.	5,359	.....	244	210	.....	.....	3,686	23,422	11,268	44,189
Gosse Packing Co., Ltd.	10,836	225	114	52	.....	287	19,230	41,765	96,595	169,104
Canadian Fishing Co., Ltd.	12,442	87	599	141	.....	521	8,593	65,416	56,116	143,915
Kingcome Packers, Ltd.	2,843	157	.....	52	.....	.....	2,779	5,950	3,428	15,209
Redonda Canning & C.S. Co., Ltd.	428	182	.....	193	29	.....	1,021	1,357	2,890	6,100
Captain's Cove Canning Co.	146	.....	.....	.....	.....	.....	280	2,664	579	3,669
Totals	43,754	899	1,465	726	29	973	43,467	179,731	180,363	451,407

Districts.

Fraser River District	85,689	9,710	3,073	20,169	13,736	40	21,783	32,256	88,495	272,860
Skeena River District	82,360	13,377	4,975	2,242	.....	754	30,208	210,081	63,527	407,524
Rivers Inlet District	56,707	66	523	96	.....	11	7,286	12,815	11,727	98,105
Smith Inlet District	17,921	15	58	39	.....	.....	164	689	31	18,917
Nass River District	15,929	4,616	751	597	.....	375	4,274	50,815	15,392	92,749
Queen Charlotte Islands District	708	.....	560	.....	.....	.....	3,716	200,512	168,319	373,815
Vancouver Island District	27,161	3,952	609	661	5,380	3	51,551	86,113	174,383	347,722
Outlying Districts	52,628	899	1,465	726	29	973	43,467	179,731	180,363	460,281
Grand totals	337,012	32,635	12,014	24,530	19,145	2,156	162,449	773,012	702,237	2,065,190

STATEMENT SHOWING THE SALMON-PACK OF THE PROVINCE, BY DISTRICTS AND SPECIES, FROM 1911 TO 1926, INCLUSIVE.

Fraser River.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.
Sockeyes	85,689	35,385	39,743	31,655	51,832	39,631	48,399	38,854
Springs, Red	12,783	7,989	2,982	3,854	10,561	11,360	10,691	14,519
Springs, White	20,169	25,701	4,648	4,279	6,300	5,949	4,432	4,296
Chums	88,495	66,111	109,495	103,248	17,895	11,233	23,884	15,718
Pinks	32,256	99,800	31,968	63,645	29,578	8,178	12,839	39,363
Cohoes	21,783	36,717	21,401	20,173	23,587	29,978	22,934	39,253
Bluebacks and Steelheads	13,776	5,152	1,822	15	817	1,331	4,522	15,941
Totals	274,951	276,855	212,059	226,869	140,570	107,650	136,661	167,944

	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
Sockeyes	19,697	148,164	32,146	91,130	198,183	719,796	123,879	58,487
Springs, Red	15,192	10,197	17,673	23,228	11,209	3,573	15,856	7,028
Springs, White	24,853	18,916	11,430	5,392	15,300	49	9,826	6,751
Chums	86,215	59,973	30,934	18,919	74,826	22,220	12,997	47,237
Pinks	18,388	134,442	840	138,305	6,272	20,773	574	142,101
Cohoes	40,111	25,895	31,330	43,514	43,504	16,018	36,190	39,740
Bluebacks and Steelheads	4,395	4,931	3,129	31	.....	.....	.....	.....
Totals	208,857	402,538	127,472	320,519	349,294	782,429	199,322	301,344

Skeena River.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.
Sockeyes	82,360	81,146	144,747	131,731	96,277	41,018	89,364	184,945
Springs	30,594	23,445	12,028	12,247	14,176	21,766	37,403	25,941
Chums	63,527	74,308	25,588	16,527	39,758	1,993	3,834	31,457
Pinks	210,081	130,079	181,313	145,973	301,655	124,457	177,679	117,303
Cohoes	30,208	39,168	26,968	31,967	24,699	45,033	18,068	36,559
Steelhead Trout	754	713	214	418	1,050	498	1,218	2,672
Totals	407,524	348,859	390,858	338,863	477,915	234,765	332,887	398,877

	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
Sockeyes	123,322	65,760	60,293	116,533	130,166	52,927	92,498	131,066
Springs	22,931	16,285	20,933	15,273	11,740	26,436	23,833	17,942
Chums	22,573	21,516	17,121	5,769	8,329	.....	504	70
Pinks	161,727	148,319	73,029	107,578	71,021	66,045	97,588	81,956
Cohoes	38,759	38,456	47,409	32,190	16,378	18,647	39,835	23,376
Steelhead Trout	4,994	1,883	3,743	1,798	.....	.....	.....	.....
Totals	374,306	292,219	223,158	279,161	237,634	164,055	254,258	254,410

STATEMENT SHOWING THE SALMON-PACK OF THE PROVINCE, BY DISTRICTS AND SPECIES, FROM 1911 TO 1926, INCLUSIVE—*Continued.*

Rivers Inlet.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.
Sockeyes	65,581	*192,323	94,891	116,850	53,584	48,615	125,742	56,258
Springs	685	496	545	599	323	364	1,793	1,442
Chums	11,727	11,510	4,924	3,242	311	173	1,226	7,089
Pinks	12,815	8,625	15,105	10,057	24,292	5,303	25,647	6,538
Cohoes	7,286	4,946	1,980	1,526	1,120	4,718	2,908	9,038
Steelhead Trout	11	.....	.....	.....	82	97	.....	.....
Totals	98,105	217,900	117,445	132,274	79,712	59,272	133,248	80,367

	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
Sockeyes	53,401	61,195	44,936	130,355	89,890	61,745	112,884	88,763
Springs	1,409	817	1,422	1,022	566	594	1,149	317
Chums	6,729	16,101	20,144	5,387	5,023	.....	3,845	288
Pinks	29,542	8,065	3,567	2,964	5,784	2,097	8,809	5,411
Cohoes	12,074	9,124	15,314	7,115	7,789	3,660	11,010	6,287
Steelhead Trout	.....	.....	.....	.....	.....	.....	.....	.....
Totals	103,155	95,302	85,383	146,838	109,052	68,096	137,697	101,066

Nass River.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.
Sockeyes	15,929	18,945	33,590	17,821	31,277	9,364	16,740	28,259
Springs	5,964	3,757	2,725	3,314	2,062	2,088	4,857	3,574
Chums	15,392	22,504	26,612	25,791	11,277	2,176	12,145	24,041
Pinks	50,815	35,530	72,496	44,165	75,687	29,488	43,151	29,949
Cohoes	4,274	8,027	6,481	7,894	3,533	8,236	3,700	10,900
Steelhead Trout	375	245	1,035	595	235	413	560	789
Totals	92,749	89,008	142,939	99,580	124,071	51,765	81,153	97,512

	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
Sockeyes	21,816	22,188	31,411	39,349	31,327	23,574	36,037	37,327
Springs	4,152	4,496	3,845	3,701	3,385	3,151	6,936	3,759
Chums	40,368	24,938	11,200	11,076	25,569	2,987	3,245	5,189
Pinks	59,206	44,568	59,593	34,879	25,333	20,539	12,476	11,467
Cohoes	17,061	22,180	19,139	15,171	9,276	3,172	12,468	7,942
Steelhead Trout	1,305	1,125	1,498	113	.....	.....	.....	.....
Totals	143,908	119,495	126,686	104,289	94,890	53,423	71,162	65,684

* Including 40,000 cases caught in Smith Inlet and 20,813 cases packed at Namu.

STATEMENT SHOWING THE SALMON-PACK OF THE PROVINCE, BY DISTRICTS AND SPECIES, FROM 1911 TO 1926, INCLUSIVE—*Continued.*

Vancouver Island Districts.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.
Sockeyes	25,070	10,895	15,618	12,006	15,147	6,936	6,987	6,452
Springs	5,222	5,664	283	138	886	3,230	29,211	36,013
Chums	174,383	127,520	165,161	120,520	108,478	34,431	12,591	128,013
Pinks	86,113	51,384	63,102	30,149	36,943	10,660	14,391	43,186
Cohoes	51,551	59,747	30,593	21,342	18,575	11,120	20,555	53,629
Bluebacks	5,383	4,832	2,510	7,097	5,495	3,151	.....	.....
Totals	347,722	260,042	277,267	191,252	185,524	69,528	74,170	267,293

Queen Charlotte and other Districts.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.
Sockeyes	62,383	49,962	40,926	24,584	47,107	18,350	64,473	54,677
Springs	3,650	5,002	4,245	2,711	4,988	4,995	15,633	14,766
Chums	348,682	305,256	195,357	148,727	80,485	21,412	30,946	165,717
Pinks	380,243	120,747	141,878	146,943	113,824	14,818	247,149	110,300
Cohoes	47,183	40,269	26,031	29,142	31,331	18,203	33,807	35,011
Steelheads and Bluebacks	973	1,520	497	732	409	2,790	3,721	702
Totals	844,114	522,756	408,934	352,839	278,144	80,568	395,728	381,163

	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
Sockeyes	51,980	32,902	45,373	98,600	87,130	149,336	79,464	67,866
Springs	8,582	6,056	11,423	9,488	7,108	7,246	22,837	12,659
Chums	90,464	112,364	160,812	40,849	70,727	52,758	37,734	39,167
Pinks	201,847	112,209	143,615	83,626	111,930	83,430	128,296	64,312
Cohoes	42,331	30,201	70,431	48,966	43,254	28,328	65,806	42,457
Steelheads and Bluebacks	1,009	865	712	985	.....	.....	.....	.....
Totals	404,793	294,597	432,366	313,894	320,168	285,898	334,187	226,461

Total packed by Districts in 1911 to 1926, inclusive.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.
Fraser	274,951	276,855	212,059	226,869	140,570	107,650	136,661	167,944
Skeena	407,524	348,859	390,858	338,863	477,915	234,765	332,787	398,877
Rivers Inlet	98,105	217,900	117,445	132,274	79,712	59,272	157,522	80,367
Nass River	92,749	89,008	142,939	99,580	124,071	51,765	81,153	97,512
Vancouver Island	347,722	263,904	277,267	191,252	185,524	69,528	84,170	267,293
Other Districts	844,139	522,756	604,745	352,839	278,144	80,568	395,223	381,163
Grand totals	2,065,190	1,719,282	1,745,313	1,341,677	1,285,946	603,548	1,187,616	1,393,156

	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
Fraser	210,851	402,538	127,472	320,519	349,294	782,429	199,322	301,344
Skeena	374,216	292,219	223,158	279,161	237,634	164,055	254,258	254,410
Rivers Inlet	103,155	95,302	85,383	146,838	109,052	68,096	137,697	101,066
Nass River	143,908	119,495	126,686	104,289	94,890	53,423	71,162	65,684
Vancouver Island	389,815	325,723	.....	.....	.....	.....	.....	.....
Other Districts	404,793	294,597	432,366	313,894	320,169	285,898	334,187	226,461
Grand totals	1,626,738	1,557,485	995,065	1,164,701	1,111,039	1,353,901	996,626	948,965

* Including 17,921 cases of sockeye packed at Smith Inlet.

STATEMENT SHOWING THE SOCKEYE-PACK OF THE ENTIRE FRASER RIVER SYSTEM FROM 1911 TO 1926, INCLUSIVE.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.
Fraser River, B.C.	85,689	35,385	39,743	31,655	51,832	39,631	48,399	38,854
State of Washington	44,673	112,023	69,369	47,402	48,566	102,967	62,654	64,346
Totals	130,362	147,408	109,112	79,057	100,398	142,598	111,053	103,200

	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
Fraser River, B.C.	19,697	148,164	32,146	91,130	198,183	719,796	123,879	58,487
State of Washington	50,723	411,538	84,637	64,584	335,230	1,673,099	184,680	127,761
Totals	70,420	559,702	116,783	155,714	533,413	2,392,895	308,559	186,248

STATEMENT SHOWING THE SOCKEYE-PACK OF THE PROVINCE, BY DISTRICTS, 1911 TO 1926, INCLUSIVE.

	1926.	1925.	1924.	1923.	1922.	1921.	1920.	1919.
Fraser River	85,689	35,385	39,743	31,655	51,832	39,631	48,399	38,854
Skeena River	82,360	81,146	144,747	131,731	96,277*	41,018	89,064	184,945
Rivers Inlet	65,581	192,323	94,891	116,850	53,584	48,615	125,742	56,258
Nass River	15,929	18,945	33,590	17,821	31,277	9,364	16,740	28,259
Vancouver Island†	25,070	14,757	15,618	12,006	15,147	6,936	6,987	6,452
Other Districts	62,383	49,962	41,014	24,584	47,107	18,350	64,473	54,677
Totals	337,012	392,518	369,603	334,647	295,224	163,914	351,405	369,445

	1918.	1917.	1916.	1915.	1914.	1913.	1912.	1911.
Fraser River	19,697	148,164	32,146	91,130	198,183	719,796	123,879	58,487
Skeena River	123,322	65,760	60,923	116,553	130,166	52,927	92,498	131,066
Rivers Inlet	53,401	61,195	44,936	130,350	89,890	61,745	112,884	88,763
Nass River	21,816	22,188	31,411	39,349	31,327	23,574	36,037	37,327
Vancouver Island†	6,243	9,639	9,223	.....	.....	.....	.....	.....
Other Districts	51,980	32,902	36,150	98,660	87,130	149,336	79,464	67,866
Totals	276,459	339,848	214,789	476,042	536,696	972,178	444,762	383,509

* 4,390 cases deducted from Skeena for 1922, Alaska sockeye.
† Vancouver Island's pack not previously segregated.

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1927.

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PROVINCE OF BRITISH COLUMBIA

ANNUAL REPORT

OF

THE DEPARTMENT OF LABOUR

FOR THE

YEAR ENDED DECEMBER 31ST

1926

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

To His Honour ROBERT RANDOLPH BRUCE,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The Annual Report of the Department of Labour of the Province for the year 1926 is herewith respectfully submitted.

A. M. MANSON,

Minister of Labour.

Office of the Minister of Labour,

June, 1927.

The Honourable A. M. Manson,
Minister of Labour.

SIR,—I have the honour to submit herewith my Ninth Annual Report on the work of the Department of Labour up to December 31st, 1926.

I have the honour to be,

Sir,

Your obedient servant,

J. D. McNIVEN,
Deputy Minister of Labour.

Department of Labour,
Victoria, B.C., June, 1927.

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REPORT OF THE DEPUTY MINISTER OF LABOUR FOR 1926.

The conditions prevailing in the Province during 1926, the period covered by this, the ninth annual report of the Department of Labour, were very favourable to the prosperity and continued development of our industries. Such labour disputes as occurred were mostly of short duration, and the total loss of working-time which they entailed was 28,016 days. The corresponding loss in 1925, which also was a period of only light industrial disturbances, was 23,300 working-days, but in 1924 no fewer than 223,876 days were lost owing to disputes. It is not out of place here to congratulate both employers and employed upon the better spirit and understanding which they have attained in their mutual relations.

Our Growing Industries.

Once again during the past year our industries witnessed considerable advancement, and the pay-roll of the Province reached a total which is easily a record for all time. No fewer than 4,521 industrial employers sent returns to this Department, and we have also made a careful calculation of the pay-roll of other employers not included in our returns. On this basis the estimate is made of the salaries and wages in connection with industrial operations in British Columbia during 1926, reaching a total of $175,173,836.47. This compares with $159,959,820.80 for the previous year and $151,037,316.20 for 1924, the increase last year being more than $15,000,000. Nearly all our leading industries shared in these increases, substantial gains being recorded by, among others, lumbering, contracting, Coast shipping, food products, metal-mining, pulp and paper, and the various manufacturing groups. The principal falling-off was in the coal-mining industry, owing to circumstances which were, at least in part, temporary, and it is satisfactory to find that, during the period between the close of 1926 and the completion of this report, the industry has taken a turn for the better. The highest number of persons employed in industries generally was recorded in September and the lowest in January. The changes made in wage-rates were mostly in an upward direction, and there was a slight increase in the general weekly average. It is gratifying to find that the number of the lowest-paid wage-earners showed a considerable decrease.

Minimum Wage for Male Workers.

In administering the "Male Minimum Wage Act" passed in the session of 1925, the Board of Adjustment decided, early in the year, that it was not practicable to apply the Act to all occupations at one and the same time. They accordingly concentrated a large amount of attention upon the lumbering industry, in which were employed a greater number of persons likely to be affected by the Act than in any other. The steps taken by the Board to ascertain the true position of affairs among lumber-workers are referred to at length in another section of the report, and the Board feel that, in fixing upon a minimum of 40 cents an hour for lumber-workers, they have done their best to strike a fair balance between the conflicting claims of employers and employed. The order went into effect on November 1st, and in the last two months of the year there was every indication that it was being faithfully observed by the general body of employers carrying on lumbering operations. In the ordinarily quiet period towards the end of the year the payment of a higher rate of wages, where such was necessary, had not brought about any unusual business depression, and there appears every reason to believe that lumbermen will be able to accommodate themselves to the new conditions. The applications for permits to pay on a lower scale in the case of handicapped workers have not been very numerous, and the 10 per cent. allowance for such cases, as decided upon by the Board, is evidently an ample margin. The validity of the Board's order was challenged in the Courts, and their right to make an order affecting one industry only, without at the same time bringing in other industries, was questioned, but the action of the Board was upheld by the Judges. The question of making further orders relating to other occupations has since been the subject of investigation.

Shorter Hours of Work.

The section of the report which deals with the "Hours of Work Act" shows that the Act, which has been operative since the beginning of 1925, is working smoothly, and that the limitation of working-hours which it imposes upon industry has been loyally accepted by employers of labour in the Province. Moreover, the period of its operation has also been a period of advance-

ment in those industries where its effects are chiefly felt. No change has been made during the year in the list of permanent exemptions issued by the Board of Adjustment nearly two years ago, as it has been found, from experience, that they are sufficient to meet the needs of our various industries, and no serious objection to them has been raised in any quarter. The report of the Board also indicates the grounds on which temporary exemptions have been granted from time to time, to suit the requirements of individual firms in times of emergency; but neither the permanent nor the temporary exemptions have interfered with the working of the Act so far as to prevent it from bringing about a notable reduction in hours of work. Such reduction is demonstrated by a comparison of the figures for 1926 with those for 1924, as given in another page of the report.

Wages of Female Employees.

In the administration of the Minimum Wage Act for Women, the principal change made during the past year was in relation to female employees in the fruit and vegetable industry. Many of these employees were engaged on piece-rates, and the intention of the Minimum Wage Board, in the existing order, had been to guarantee to them a rate of pay not less than the minimum set for time-workers. A ruling given in a case in Court, however, made it doubtful whether such guarantee could be enforced; and the Board, after a public conference held in Vancouver, decided to make the wording of the order more explicit, thereby securing for piece-workers the benefit of the legal minimum wage. At the same time the minimum figure was slightly raised from $14 to $14.40 a week. The tabulation of the wages of female employees this year takes account of 16,070 women and girls compared with 13,899 for 1925. In most of the groups there is a slight reduction in the average weekly wage of experienced adult workers, and for this check no general explanation can be suggested. There have been fewer cases of contravention of the law which in the opinion of the Board called for prosecution, but greater results have been secured in the collection of arrears, which have been duly handed over to women and girls who had been underpaid.

50,000 Persons placed in Employment.

The Employment Service in the Province has continued to do excellent work, and was instrumental during the year in finding employment for over 50,000 persons. Special attention has been given to the needs of handicapped workers, including a very large number of ex-service men, and the special section of the Service dealing with these workers succeeded in placing 2,087 men, or about 200 more than during the thirteen months covered by the previous report. For a few months in the early part of the year a "Citizens' Committee" in Vancouver also put forward an effort to secure employment for ex-service men. Its functions were largely a duplication of those of the Handicap Section of the Employment Service, which led to some confusion, and the work of the committee was not continued after about three months.

New Legislation.

New laws of special interest to working men and women, which were placed on the statute-book in the last session of the Provincial Legislature, may be briefly summarized:—

Under the existing "Factories Act," children were permitted, without restriction as to hours of labour, to be employed in canning fish and in fruit-packing, but a new "Factories Act Amendment Act" made such employment conditional upon the written permission of the Factory Inspector being obtained, such permission to set forth the number of hours daily, not exceeding six, during which a child may be employed. Another clause of the Act authorizes the Inspector to permit a laundry to be operated on a holiday or during extra hours, on being satisfied that the exigencies of the trade require such extension; the working-hours in no case to exceed those prescribed by or under the "Hours of Work Act." The Act permits some additional latitude in the canning or curing of fish, or in fruit-packing, in the height of the season.

The "Minimum Wage Act Amendment Act" made it obligatory upon every employer of female employees to keep records as to wages paid and hours worked. It also authorized the Minimum Wage Board to amend an order relating to the wages and hours of female employees without reconvening or calling any conference. Under the original Act an employer contravening an order under the Act was liable to a fine; the amending Act further provided that he should be ordered by the Magistrate, on conviction, to pay to an employee the amount by which she had been underpaid with costs.

The "Old-age Pension Act" enabled the Government of the Province to enter into an agreement with the Dominion Government as to a general scheme of old-age pensions for the Province pursuant to the provisions of a Dominion Act, and for the payment by the Dominion Government to the Provincial Government quarterly of one-half the net sum paid out during the preceding quarter by the Provincial Government for old-age pensions under the Act. It was further provided that the Act should be administered by the Workmen's Compensation Board, and that it should come into operation on a day to be fixed by the Lieutenant-Governor by Proclamation.

Under the "Tug-boat Men's Lien Act," the owner of a tug-boat who performs towage is to have a lien on the logs or timber products towed for the amount of money payable for the towage. The lien is to lapse, however, in thirty days, unless the owner of the tug-boat in the meantime files an affidavit giving particulars of his claim, to be followed by a legal action within another thirty days.

STATISTICS OF TRADE AND INDUSTRIES.

That the year 1926 was a period of important advancement in the industries of the Province is the main conclusion to be derived from the mass of statistical matter which has been collected by the Department of Labour from our industrial employers. For the past nine years this statistical work has been undertaken annually by the Department, and perhaps in no other way than by a comparison of our figures from year to year can an adequate idea be obtained of the manner in which our industries have been changing and progressing during that period. Each year we have given particulars of the pay-roll in the different industries, the weekly wages of workers, the nationality of persons employed, and the fluctuations of employment from month to month.

The Method of obtaining Information.

The method followed by the Department may be again explained. At the beginning of the year we send out to industrial employers of labour a questionnaire covering, among other matters, the features above mentioned, and they are asked to make their returns not later than the end of January. In the large majority of cases this request is fairly met, but once more we have to call attention to the delay of some employers in filling out the forms, which delay has made it impossible for the Department to issue this section of the report as early as we would have desired. Although the Department has in no case gone to the limit of its powers in dealing with delinquents, it may be well to make it clear that employers failing to send in their returns within the period specified are rendering themselves liable to prosecution. Section 8 of the "Department of Labour Act" sets forth that:—

"Every person who for the space of one month after receipt of notice to furnish information required under any of the provisions of this Act neglects or refuses to furnish the same shall be liable, on summary conviction, to a penalty not exceeding one hundred dollars, and every person who furnishes information required under this Act, knowing it to be false, shall be liable to a like penalty."

Moreover, the above clause has been specifically applied to the Department's statistical questionnaire by Order in Council. It was found necessary in a few cases to bring this fact very pointedly to the notice of certain employers before a return could be secured. Those employers whose returns were still missing when our final compilation was made are comparatively few and unimportant, and, as will be seen later, an estimate has been made of their probable pay-roll for the year.

Returns received from 4,521 Employers.

The number of returns actually received for the year is 4,521, an increase of 383 over the corresponding total for 1925. This increase may be taken as representing, in the main, the march of industrial development in the Province, though we are also of opinion that the Department is successful each year in obtaining returns from a somewhat larger proportion of the firms in business. Whatever the explanation, the fact remains that the number of these annual returns has grown surprisingly in the past eight years. Our records begin with 1,047 returns in 1918, the number going up to 1,207 for 1919, 1,869 for 1920, 2,275 for 1921, 2,809 for 1922, 3,375 for 1923, 3,566 for 1924, 4,138 for 1925, and 4,521 for 1926.

No new feature was introduced in the form of the questionnaire sent out this year, but a question relating to the hourly rates of wages of employees following particular occupations was changed somewhat, with the object of gaining more exact information which might be useful to the Board of Adjustment in administering the "Male Minimum Wage Act." This information was sought for the first time last year, when apparently some employers took account of female as well as male employees in the answers which they gave, and there was no inquiry as to the number of workers following different occupations. The necessary changes which were made in this year's questionnaire have produced a large additional body of information as to wages prevalent throughout the Province, which information is now in possession of the Department.

How the Industrial Pay-roll is divided.

The 4,521 firms making returns account for a pay-roll of $129,420,599.55. For 1925 the returns of 4,138 firms showed a pay-roll of $115,943,238.60, and in the previous year 3,566 firms paid out a sum of $107,798,771.36. The amount paid to officers, superintendents, and managers last year was $12,399,863.91, which represents an increase, as compared with the corresponding amount for 1925, of 16.69 per cent. Clerks, stenographers, and salesmen received a total of $10,627,258.93, compared with $9,698,598.40 in 1925, an increase equal to 9.57 per cent. The sum

received by wage-earners was $106,393,476.71, which compares with $96,620,701.07 in 1925, an increase equivalent to 11.25 per cent. There does not seem to be any special significance belonging to the difference in the relative increases for the three branches of service, though this is not the first year in which the managerial departments have shown a more rapid gain than the other two branches, which may possibly be a result of the greater attention given to organization and specialization in our industrial operations, incidental to the attempt which has been made, not unsuccessfully, in many lines, to bring about a lower cost per unit of production. Adding together these percentages of increase for the past four years, we find that, since the beginning of 1923, payments to officers, superintendents, and managers have increased by 49.69 per cent.; payments to clerks, stenographers, and salesmen by 40.07 per cent.; and to wage-earners by 43.55 per cent.

Of the total payments for salaries and wages in 1926, officers, superintendents, and managers received 9.58 per cent.; clerks, stenographers, and salesmen, 8.21 per cent.; and wage-earners, 82.21 per cent. The comparative proportions in 1925 were 9.17 per cent., 8.36 per cent., and 82.47 per cent.; and in 1924 they were 9.04 per cent., 8.29 per cent., and 82.67 per cent.

Some Supplementary Figures.

It should be kept in mind that the totals given above are not the complete industrial pay-roll of the Province. In endeavouring to arrive at a comprehensive total it will be necessary to include certain other substantial amounts. The total already given, $129,420,599.55, is the industrial pay-roll for the year of the 4,521 firms making returns to this Department, up to the time when our final tabulation was made. From then, and until the time of sending this report to the press, over a hundred additional returns were received, their pay-roll aggregating $701,743.16. It is necessary, further, to make an estimate regarding other firms engaged in industries which come within the scope of our inquiry, but from whom no returns were received, and under this head we have allowed a sum of $6,350,000. This brings the total to $136,472,342.71 for salaries and wages in the purely industrial operations embraced by our inquiry, the corresponding total for 1925 being $125,294,415.22.

Next to be considered are the transcontinental and other railway systems, not, however, including industrial, interurban, or street-car lines. They have each and all made a statement to the Department of their pay-roll in British Columbia for 1926, the total being $13,701,493.76, or $397,658.18 more than in 1925. In the employ of the Dominion and Provincial Governments are many workers whose duties are of an industrial or semi-industrial character, and for these we have allowed a wage payment of $6,000,000. Wholesale and retail firms, who are not asked to make returns to this Department, are estimated to have a pay-roll of $4,000,000; and in another group comprising express companies, telegraph companies, and ocean steamship services —the latter having a large number of employees whose homes are in the Province—the wages paid last year were calculated to amount to $8,000,000. Outside of these are a large number of semi-industrial occupations to whom the general terms of our questionnaire do not strictly apply. Included in these are delivery, cartage and teaming, warehousing, butchers, moving-picture operators, coal and wood yards, and auto transportation, with a collective pay-roll of probably not less than $5,500,000. Other miscellaneous industrial activities, not to be classified under any of the above heads, would increase the total by $1,500,000.

The industrial pay-roll of the Province, treated in a comprehensive manner as above, may therefore be summarized as follows:—

Pay-roll of 4,521 firms making returns to Department of Labour	$129,420,599 55
Returns received too late to be included in above	701,743 16
Employers in occupations included in Department's inquiry, not sending in returns—estimated pay-roll	6,350,000 00
Transcontinental railways	13,701,493 76
Dominion and Provincial Government workers	6,000,000 00
Wholesale and retail firms	4,000,000 00
Delivery, cartage and teaming, warehousing, butchers, moving-picture operators, coal and wood yards, and auto transportation	5,500,000 00
Ocean service, express and telegraph companies	8,000,000 00
Miscellaneous	1,500,000 00
Total	$175,173,836 47

Proportions for Different Areas.

For the third time, this year we have segregated the returns according to the areas in which the industrial operations dealt with were being carried on. The result shows that 36.44 per cent.

of our industrial pay-roll was located last year in Greater Vancouver, compared with 35.05 per cent. in 1925 and 36.05 per cent. in 1924. For the purpose of this calculation, Greater Vancouver is taken to include Vancouver City, North Vancouver, South Vancouver, West Vancouver, Point Grey, and Burnaby. The rest of the Mainland, including also the Queen Charlotte and other Northern Islands, had 46.31 per cent. of our industrial pay-roll—an increase compared with the 45.93 per cent. for 1925 and 45.02 per cent. for 1924. Vancouver Island, taking in also for this purpose the Gulf Islands, has a lower percentage of the Province's pay-roll for this year—the 17.25 per cent. for 1926 comparing with 19.02 per cent. in 1925 and 18.93 per cent. in 1924. The lessened activity of coal-mining on the Island during 1926 is sufficient to account for this difference. Dividing the totals given in the preceding paragraphs in the same proportion as the figures in actual returns, we arrive at the following apportionment of the industrial pay-roll of the Province for the past three years:—

	1924.	1925.	1926.
Greater Vancouver	$ 54,449,747 95	$ 56,065,917 19	$ 63,833,346 01
Rest of Mainland	67,992,347 26	73,469,545 69	81,123,003 67
Vancouver Island	28,595,220 99	30,424,357 92	30,217,486 79
Totals	$151,037,316 20	$159,959,820 80	$175,173,836 47

As in previous years, the 4,521 returns received were divided into twenty-five groups. Twenty of these show an increase over their pay-roll for 1925, the increase amounting to $14,808,307.87. The remaining five groups show a decreased pay-roll, the decrease aggregating $1,330,846.62. There is, accordingly, a net increase in the twenty-five groups of $13,477,360.95.

Business Expansion the General Rule.

These figures show that our industries during 1926 were, for the most part, in a very healthy condition—expansion being the general rule. The building and contracting group, for example, had shown such a marked advance during 1925 that many people doubted its ability to go further ahead in 1926, and yet, in this later year, the pay-roll of the industry went up by $1,700,000. The Lower Mainland, the region centring in the City of Vancouver, obtained the chief benefit of this, but improved records came from most of the other districts in the Province. Some of the big contracts which helped to make up the return are now finished, but others have been entered upon, and small operations, such as the building of residences, are probably more numerous, so that appearances point to another good showing for the current year. Our wonderful Coast waterways are becoming more important as the highways and byways of commerce, and the pay-roll in the Coast shipping group went up last year by over a million and three-quarters. The wage payments in this group have more than doubled themselves in the last four years. The food products group improved upon its pay-roll for 1925 by more than a million, and while the fine record achieved by the fish-canneries was mainly responsible for this, we should not ignore the expansion in other divisions embraced in this group, such as creameries and dairies, cereal-milling, fruit-canneries, bakeries, jam-making, and packing-houses.

Three Millions more for Lumbering.

Coming to lumbering, our largest group, nearly three millions was added to the pay-roll in 1926, a fact which is, itself, an eloquent comment upon recent legislation, of which the effect has been felt chiefly in lumbering operations. The increase of three-quarters of a million in the pay-roll of metal-mining follows upon a series of annual additions to the pay-roll, carried over a number of years, and the prevailing note in this industry to-day is one of continued advancement. The forward step by over $200,000 in our wood-manufacturing industry is a welcome sign that progress is being made in the marketing of our lumber products in a more finished state. A similar increase was shown in the smelting industry, while ship-building and repairing, after lagging somewhat in 1925, last year showed an increase of more than 50 per cent., the actual gain being over $600,000. Even a greater proportionate advance was made by the pulp and paper industry, which paid out $2,300,000 more in wages in 1926 than in 1925. This is mainly due to the fact that one of the largest concerns in the Province virtually doubled its capacity during the year, and other operations were also on an extended scale. The full result of these developments upon the annual pay-roll will not be seen until the end of the current year; and by that time we shall probably know more about other important new projects which are now in hand.

Some Additional Increases.

Printing and publishing is in line with other industries in showing an advance of $369,000, and paint-manufacturing, one of our smaller industries, goes forward proportionately. Another group which shows more than a 50-per-cent. increase is that of oil-refining, in which is included those flourishing new ventures, the fish-reduction plants on the western coast of Vancouver Island and the Northern Mainland. The metal trades group, in which are included machine-shops, boiler-making, foundries, garages, etc., are up by a round million and a half, a circumstance for which one can suggest no other explanation than the general prosperity of the Province; and the same condition no doubt explains the satisfactory increases in other groups, such as laundries, cleaning and dyeing, manufacturing leather and fur goods, manufacturing jewellery, house-furnishing, and garment-making. The production of builders' materials makes another stride in step with the growth of building and contracting, and the pay-roll of the breweries and soft-drink manufacturers is also appreciably ahead.

Where the Pay-roll is Lower.

Of the industries which show a decreased pay-roll, the most conspicuous is coal-mining. The reduction of its pay-roll by over $600,000 may be due partly to the severe competition of oil-fuel in its various forms, and partly also to the extreme mildness of the winter of 1925–26, necessitating less than the normal consumption of domestic coal. However, the first few months of the current year have witnessed a notable increase in coal production in the Province. There is again a decreased pay-roll in the explosives and chemicals group and a slight decrease in cigar and tobacco manufacturing. The reduction by over half a million in the pay-roll of the miscellaneous group is probably more apparent than real, as this group always embraces a number of operations which, by changing their character somewhat, become eligible for inclusion in one of the other groups. The wage payments for various public utilities in the Province show a reduction of nearly $100,000, and the explanation appears to be that in 1925 the returns from some of the operations, particularly in the Interior of the Province, included considerable payments for extension-work. The large companies in the Coast region nearly all paid larger totals under the head of wages in 1926 than in 1925.

A comparison of the pay-roll in the various industries for the past three years is given in the following table:—

Industry.	1924.		1925.		1926.	
	No. of Firms reporting.	Total Pay-roll.	No. of Firms reporting.	Total Pay-roll.	No. of Firms reporting.	Total Pay-roll.
Breweries	26	$ 574,933 86	27	$ 607,093 14	33	$ 777,755 68
Builders' materials	56	1,251,102 23	55	1,390,309 48	72	1,652,946 45
Cigar and tobacco manufacture	7	65,159 24	6	57,085 07	7	55,722 32
Coal-mining	22	7,599,643 78	21	7,475,214 61	27	6,847,756 57
Coast shipping	131	6,480,990 92	144	6,736,972 71	146	8,515,239 41
Contracting	855	12,270,425 17	982	13,343,560 02	1,191	15,046,488 07
Explosives and chemicals	24	790,926 46	19	564,630 16	9	468,600 30
Food products	331	7,760,664 62	378	9,110,298 75	441	10,294,610 51
Garment-making	62	692,802 47	79	703,383 97	82	883,661 63
House-furnishing	40	503,972 11	43	515,105 29	42	646,404 44
Manufacturing jewellery	13	254,729 38	10	220,705 69	9	236,981 78
Laundries, cleaning and dyeing	64	1,154,546 69	84	1,363,415 91	77	1,408,574 44
Manufacturing leather and fur goods	46	420,517 74	54	413,277 52	58	458,889 00
Lumber industries	904	31,339,445 11	990	32,015,830 90	974	34,826,351 73
Metal trades	465	5,646,298 18	522	5,849,903 31	579	7,386,692 84
Metal-mining	162	7,102,374 33	215	7,829,541 92	260	8,600,887 09
Miscellaneous	72	1,463,132 65	145	2,715,462 40	117	2,205,618 67
Oil-refining	5	492,761 90	8	774,587 52	21	1,178,387 30
Paint-manufacture	11	226,368 42	12	192,648 70	9	223,448 47
Printing and publishing	96	2,636,049 66	104	2,910,339 76	126	3,279,828 06
Pulp and paper mills	10	3,981,623 11	11	3,989,546 96	13	6,289,325 87
Ship-building	30	1,436,102 46	35	1,212,370 71	40	1,835,435 17
Smelting	3	4,213,469 30	4	5,037,966 16	3	5,275,709 00
Street-railways, etc.	69	7,794,865 55	101	8,984,065 58	85	8,887,913 34
Manufacturing wood (N.E.S.)	59	1,645,866 82	89	1,929,922 36	82	2,137,361 41
Totals	3,566	$107,798,771 36	4,138	$115,943,238 60	4,521	$129,420,599 55

TABLE SHOWING THE AMOUNT OF VARIATION OF EMPLOYMENT IN EACH INDUSTRY IN THE LAST TWO YEARS.

Industry.	1925.				1926.			
	Month of Most Employment.	Number employed.	Month of Least Employment.	Number employed.	Month of Most Employment.	Number employed.	Month of Least Employment.	Number employed.
Breweries	November	365	February	280	June	485	January	378
Builders' materials	August	1,042	January	765	July	1,196	January	847
Cigar and tobacco manufacturing	July	71	January	32	January	47	June	27
Coal-mining	December	5,284	May	4,656	January	4,869	April	4,272
Coast shipping	October	7,542	February	5,383	March	6,799	December	6,100
Contracting	August	9,531	January	6,430	August	10,739	January	7,080
Explosives, chemicals, etc.	September	481	January	217	August	368	December	147
Food products, manufacture of	August	8,097	January	3,807	July	11,190	February	3,942
Garment-making	October	619	January	505	October	763	January	525
House-furnishing	November	376	February	313	November	451	March	391
Jewellery, manufacture of	Sept. and Oct.	74	April	70	Nov. and Dec.	73	August	67
Laundries, cleaning and dyeing	September	1,333	January	1,178	July	1,451	January	1,265
Manufacturing leather and fur goods	September	292	October	277	November	359	Jan. and Feb.	296
Lumber industries	October	26,584	January	19,882	May	27,201	December	20,773
Metal trades	October	3,355	January	2,769	September	4,129	January	3,477
Metal-mining	September	4,788	January	3,697	September	5,272	February	4,218
Miscellaneous trades and industries	May	1,677	January	1,324	August	1,399	January	1,096
Oil-refining	October	584	January	286	August	818	December	522
Paint-manufacturing	March	103	January	68	June	113	January	86
Printing and publishing	December	1,187	August	1,130	October	1,237	August	1,174
Pulp and paper manufacturing	November	2,326	March	2,116	October	3,228	January	2,382
Ship-building	May	874	September	545	March	1,495	August	879
Smelting	December	2,401	April	2,233	December	3,108	January	2,327
Street-railways, gas, water, power, telephones, etc.	July	5,733	December	5,203	July	5,646	January	4,761
Manufacture of wood (N.E.S.)	September	1,711	January	1,166	July	1,751	January	1,114
General totals	October	83,122	January	65,315	September	89,912	January	70,030

Racial Origin of our Workers.

The information given in the tables headed "Nationality of Workers" presents no striking contrasts with the corresponding figures for last year. The numbers are somewhat higher in nearly every instance, and the fact that some nationalities show a greater increase than others indicates the sources from which our additional supply of industrial labour is being drawn. As in other years, the largest share of our labour is supplied by native Canadians and natives of Great Britain, who, between them, represent rather more than two-thirds of our industrial workers. The numbers of Canadians and British accounted for in our returns are respectively 40,450 and 33,814, as against 39,033 and 33,601 respectively in 1925. It may be assumed that the increase in the Canadian element is largely made up of young men and women who have recently arrived at the working age. The Canadian percentage, which fell from 36.42 in 1924 to 35.68 in 1925, recovered nearly all this lost ground in 1926, going back to 36.39. On the other hand, the British percentage, which fell from 31.24 in 1924 to 31.15 in 1925, has a further drop to 30.42; the number of British male employees showing a slight actual decrease, which is more than made up by the larger number of females. Including together the native Canadians, British, natives of the United States and Australia, we find that English-speaking countries supplied 70.92 per cent. of our labour for 1926, the percentage in 1925 being 70.85, and in the two previous years 72.33 and 69.61. There was a slight increase in both the American and Australian figures.

The Proportion of Asiatics.

The Asiatic workers in our industries, as enumerated in our returns, increased from a percentage of 11.30 in 1925 to 11.56 in 1926. This increase represents a slight check to a reduction which had been going on, with only one interruption, every year since 1918, when 20.37 per cent. of our workers were of Asiatic origin. In 1919 this percentage fell to 18.35 and in 1920 to 16.64. At the time this change was attributed to the fact that large numbers of our ex-soldiers were returning and taking their places in the industrial field. The percentage of Oriental workers again fell, however, to 14.45 in 1921, but rose to 14.61 in 1922, only to drop to 13.85 in 1923, 11.97 in 1924, and 11.30 in 1925, so that, despite the slight increase in the past year, the proportion is decidedly smaller than in any of the eight previous years. The increase in the number of Asiatics is chiefly made up of Chinese, though Japanese, and particularly females of that country, figure more largely in the returns. The progressive decline in the number of Hindus, which has been going on over a number of years, is again in evidence.

From the countries of Continental Europe there is a slightly reduced percentage, though the actual numbers are in most cases higher than in 1925. A reference to our last Annual Report shows that from 1924 to 1925 there was an increase in the percentage of Continental Europeans from 14.56 to 15.91. Part of this increase was lost in 1926, the percentage going down to 15.62. The principal increases are shown by Scandinavians, Russians and other Slavs, and Italians, and a slight decrease is shown by Austrians and in those from "other European countries."

Dividing our industrial workers into groups as above referred to, the proportions for the last four years are as follows:—

	1923.	1924.	1925.	1926.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Natives of English-speaking countries	69.61	72.33	70.85	70.92
Natives of Continental Europe	15.45	14.56	15.91	15.62
Natives of Asiatic countries	13.85	11.97	11.30	11.56
From other countries, or nationality not stated	1.09	1.14	1.94	1.90
	100.00	100.00	100.00	100.00

Native Canadians and British Workers.

Over a number of years there have always been certain industries in which native Canadians predominated over those of British birth, and others in which the positions were reversed. Thus, in 1926, native Canadians held the first place in lumbering, breweries, cigar and tobacco manufacturing, contracting, explosives and chemicals, the manufacture of food products, garment-making, metal trades, metal-mining, oil-refining, paint-manufacturing, printing and publishing, and the manufacturing of wood (N.E.S.). Natives of Great Britain were the most numerous in the production of builders' materials, coal-mining, Coast shipping, house-furnishing, jewellery-

manufacture, laundries, cleaning and dyeing, manufacture of leather and fur goods, manufacture of pulp and paper, ship-building, smelting, public utilities, and the miscellaneous group. While native Canadians easily retained their priority in the lumbering group, their percentage of workers in that industry fell from 34.60 to 32.76, while the British percentage fell from 16.73 to 13.68. The additional labour required by breweries has been recruited largely from the British element, but in the production of builders' materials the new employees consist mainly of Canadians. In Coast shipping a reduction in the number of native Canadians is almost exactly balanced by a British gain. In the manufacture of food products the Canadian gain was much greater than the British. In garment-making the number of male employees, Canadian and British, was more than doubled, although, compared with 1925, the number of female workers showed a considerable falling-off. British workers supplied most of the extra help in the metal-mines, but in the new fish-reduction plants the employees were chiefly Canadian. Of the large number of new employees needed in the pulp and paper industry, the British furnished a much larger proportion than the native Canadians, the latter increasing their number by only fifteen, whereas the British total went up by 375. There was also a greater British than Canadian gain in the ship-building group.

The total of workers of Scandinavian birth went up from 8,473 to 9,056. In coal-mining there were 354, against 102 in 1925, but in Coast shipping the number was down. In the food products operations they supplied over 300 extra workers and about 100 more to the ship-building group. Something like 500 more Russians and Slavs are accounted for in our returns this year, the groups in which most of this increase occurred being contracting, lumbering, metal-mining, pulp and paper manufacturing, and smelting. An increase of 274 is shown in the number of Italians, and these have gone mostly into Coast shipping, the food products group, pulp and paper manufacturing, and smelting.

Orientals and Fish-canneries.

The fact that our returns for 1926 show 1,395 more Asiatic workers than those for 1925 invites an explanation. More than this amount of increase is accounted for in the food products group alone. In this group our returns show 1,446 more Orientals employed than in 1925, and these again are accounted for chiefly by the fish-canneries, with 2,425 Oriental workers as compared with 1,586, an increase of 839. The figures for the two years, however, are not strictly comparable. In former years most of the Oriental contractors for the canneries have avoided making returns, but this year the Department has insisted upon their being made, and the inclusion of their figures has swelled the number of Oriental employees in this year's totals, whereas those similarly employed in previous years were not counted. In most other groups the number of Orientals was virtually stationary, or even showed a reduction. Thus, in the contracting group, there were 22 Chinese, no Hindus, and 8 Japanese, where in 1925 there were 93 Chinese, 13 Hindus, and 53 Japanese. In the lumbering group there was a slight increase.

Weekly Wages, 1926, compared with 1925.

The increases and decreases in weekly wages are shown in the following table:—

Increases.		*Decreases.*	
Builders' materials	$0 60	Breweries	$0 09
Coast shipping	1 38	Cigar and tobacco manufacturing	73
Contracting	83	Coal-mining	46
Explosives and chemicals	44	Food products, manufacture of	05
Garment-making	38	Metal trades	21
House-furnishing	33	Miscellaneous trades and industries	77
Jewellery, manufacture of	1 63	Paint-manufacture	06
Laundries, cleaning and dyeing	1 70	Smelting	2 85
Manufacturing of leather and fur goods	22		
Lumber industries	16		
Metal-mining	53		
Oil-refining	09		
Printing and publishing	64		
Pulp and paper manufacturing	09		
Ship-building	1 02		
Street-railways, gas, water, power, telephones, etc.	1 57		
Manufacturing wood (N.E.S.)	1 34		

It will be seen that in seventeen of the groups there was an average increase in weekly wages, and in eight groups an average decrease. Only male workers over 18 years of age are included in this calculation, the wages of female employees being dealt with in another section of the report. The comparison of wages for the two years, it may be noted, is not affected by any substantial difference as to hours of labour, and the 1926 returns in the lumbering industry nearly all relate to a period before the order under the "Male Minimum Wage Act" went into effect.

Changes in the Weekly Rates.

As a result of disputes which developed during the year, large numbers of carpenters, shipyard-workers, and electrical workers secured an advance of wages, which explains the higher average wage in the contracting, ship-building, and public utilities groups. As to the increased wage average in the Coast shipping group, it should be stated that the practice of including an estimate for board, in addition to money payments, in the amounts entered as wages is now more prevalent with shipping employers. The largest increase of all is shown in the laundries, cleaning and dyeing group, and the average wage in the small industry of jewellery-manufacture, with another increase following that of last year, goes up to its highest point in several years. The most marked change in the weekly average of any group is the reduction of $2.85 a week in smelting. While the average for this group still remains as high as $32.90 a week, it seems singular at first sight that such a reduction in wages should synchronize with marked expansion of the industry, but the explanation appears to be an arrangement under which wages rise and fall with the fluctuation in the price of metals.

Low-paid Workers fewer in Number.

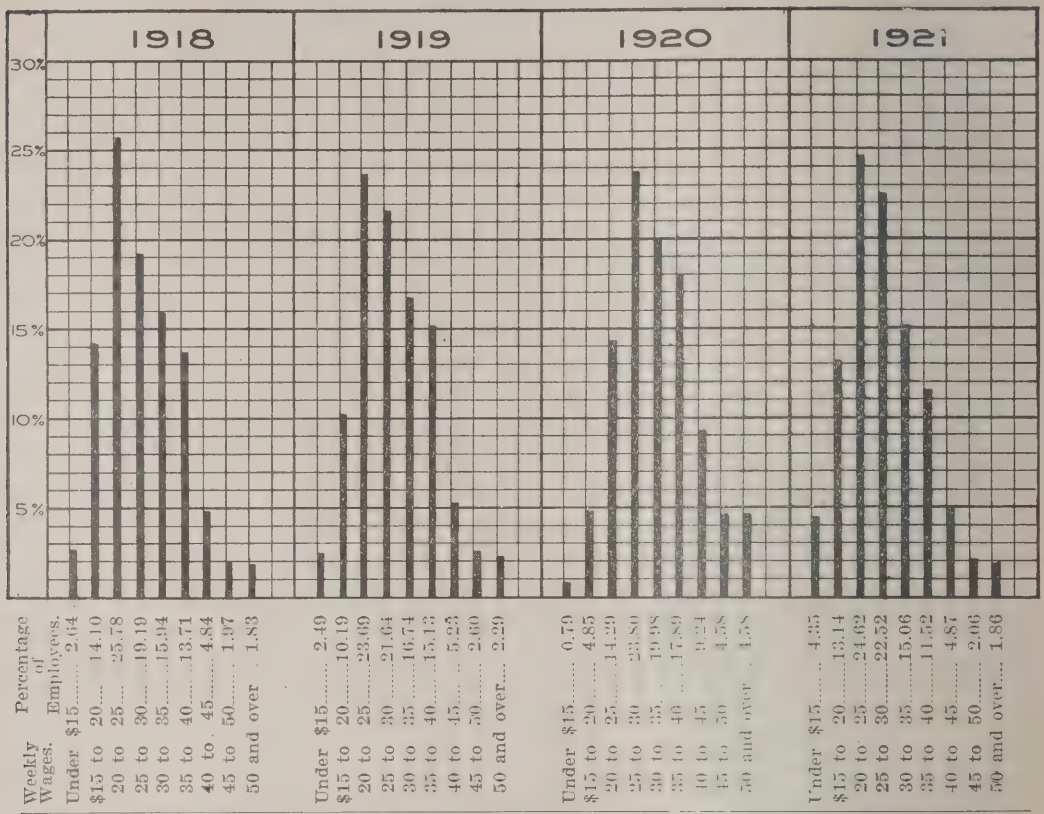
The total of adult male wage-earners accounted for, 100,303, compares with a total of 95,441 for 1925, the increase being at the rate of 5.09 per cent. In last year's report the Department called attention to the fact that there was a larger number of wage-earners receiving under $18 a week, or less than $3 a day. The 1926 figures, however, tell a very different story, the number of these wage-earners falling from 10,803 to 6,978, or a reduction of 35.13 per cent. Wage-earners receiving from $18 to $30 a week, or from $3 to $5 a day, have grown in number from 51,370 to 58,758, a rise of 14.38 per cent., and those receiving $30 a week or over have increased by 3.90 per cent.—from 33,268 to 34,567. It is particularly gratifying to note a considerable reduction in the number of very low-paid workers. Thus, there were, in 1925, 49 male workers receiving under $6 a week, and in 1926 only 2. In 1925 there were 45 receiving from $6 to $7 a week, and in 1926 only 3; and other changes have been as follows:—

$7 to $7.99 a week, reduced from 37 to 12;
$8 to $8.99 a week, reduced from 158 to 53;
$9 to $9.99 a week, reduced from 139 to 54;
$10 to $10.99 a week, reduced from 297 to 97;
$11 to $11.99 a week, reduced from 382 to 204;
$12 to $12.99 a week, reduced from 1,249 to 359.

These changes appear to have been fairly general, affecting most of the industrial groups. At the other end of the scale there were 2,446 wage-earners receiving $50 a week or over in 1926, as against 2,067 in 1925. In this section there were notable increases in the contracting, laundries, metal trades, miscellaneous, oil-refining, printing and publishing, pulp and paper, ship-building, and wood-manufacturing (N.E.S.).

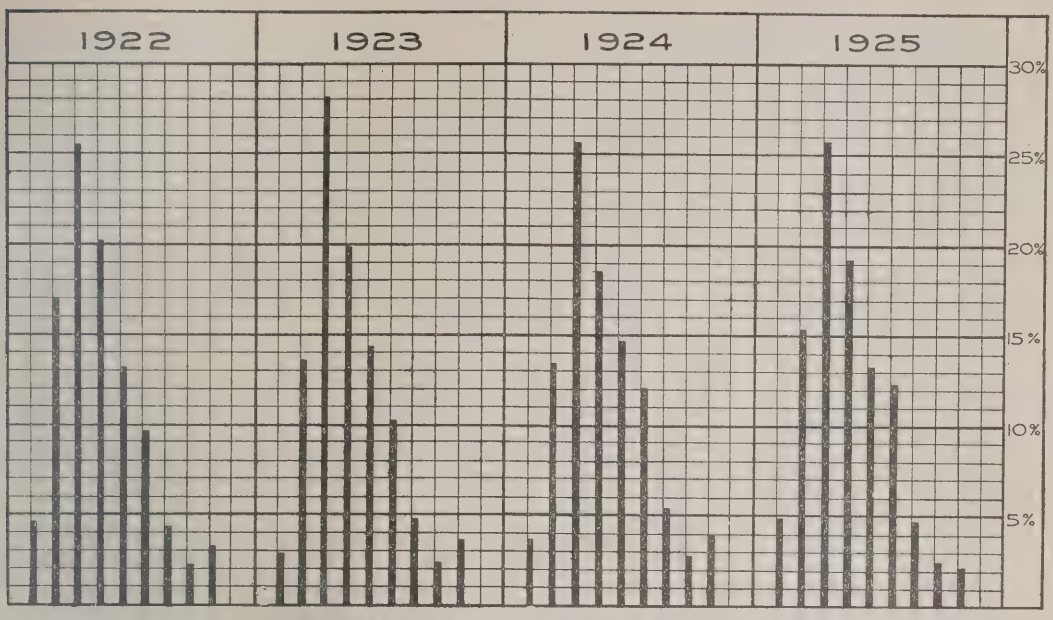
The changes in the prevailing industrial wages in the Province during the past nine years are shown in the diagram on pages 18 and 19.

CHART SHOWING FLUCTUATION IN INDUSTRIAL WAGES.

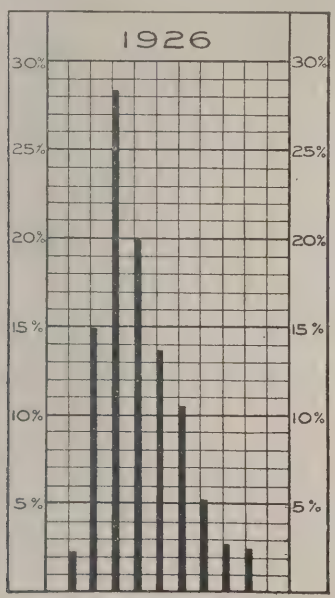


| Weekly Wages. | Percentage of Employees. | | |

CHART SHOWING FLUCTUATION IN INDUSTRIAL WAGES—*Continued.*



Weekly Wages.	Percentage of Employees.			
	1922	1923	1924	1925
Under $15	4.64	2.91	3.65	4.90
$15 to 20	16.94	13.66	13.38	15.30
20 to 25	25.48	28.01	25.64	25.73
25 to 30	20.15	19.90	18.63	19.21
30 to 35	13.20	14.38	14.67	13.27
35 to 40	9.69	10.23	12.02	12.26
40 to 45	4.37	4.79	5.33	4.71
45 to 50	2.24	2.40	2.72	2.46
50 and over	3.29	3.72	3.96	2.16



Weekly Wages.	Percentage of Employees. 1926
Under $15	2.27
$15 to 20	14.93
20 to 25	28.34
25 to 30	19.99
30 to 35	13.67
35 to 40	10.43
40 to 45	5.14
45 to 50	2.79
50 and over	2.44

AVERAGE WAGE IN INDUSTRIES.

For several years past it has been the practice of the Department to make a comparison of the wages prevalent in the different years, the average wage of adult males in each industry being worked out on the basis of the classified weekly wage-rates. This practice has again been followed for 1926. In our questionnaire we invite employers to give the number of wage-earners within specified limits, but it would not be practicable for us to request exact figures. Accordingly, to take one example, the 10,776 wage-earners who received "$24 to $24.99 weekly" would no doubt include some receiving $24, some $24.25, some $24.50, some $24.75, etc.; while the 13,713 who received "$30 to $34.99" would be made up, in unknown proportions, of those receiving $30, $31, $32, $33, $34, etc. For the purpose of making an average it has been assumed, where steps of $1 were given in our table, that "$24 to $24.99," for example, meant $24.50; and, where steps of $5 were given, that "$30 to $34.99," for example, meant $32. Lest these assumptions should be thought to err on the side of generosity, "$50 and over" was taken in all cases to mean $50 only.

As the same method of computation has been followed for each of the years mentioned in the table on page 18, the comparisons may be accepted as entirely fair.

The averages are calculated from figures supplied by each firm for the week of employment of the greatest number, and represent the pay for a full week's work. Actual weekly earnings in many cases at certain periods of the year would be lower owing to stoppages or broken time. On the other hand, many employees would receive larger amounts at periods

when overtime was being worked. By pooling the figures for all the above industries, and taking into account the respective numbers employed in them, a general average wage for each year is arrived at:—

Average Industrial Wage for all Adult Male Wage-earners as computed from Returns.

1918	$27 97	1923	28 05
1919	29 11	1924	28 39
1920	31 51	1925	27 82
1921	27 62	1926	27 99
1922	27 29		

The lowering of the weekly average between 1924 and 1925 was explained by the reduction in the working-hours of many employees, resulting from the operation of the "Hours of Work Act."

Firms with a Pay-roll over $100,000.

The industrial firms in the Province whose annual pay-roll exceeds $100,000 have again been numbered. The first year in which such record was compiled was 1921, when there were 118 of these large operations. In 1922 there were 164, and in 1923 there were 200. Then there was a fall in 1924 to 196, this also being the total for 1925. For the year 1926, however, there were 230 firms with a pay-roll of $100,000 or more. Eleven of these had a pay-roll of over $1,000,000, three of them being between $2,000,000 and $3,000,000, one between $3,000,000 and $4,000,000, and one over $4,000,000. This list does not include any public authorities, Dominion, Provincial, or municipal; nor does it take account of transcontinental railways, wholesale and retail merchants, and deep-sea shipping. The lumbering industry, of course, has the highest number of these large firms, 102, compared with 89 in the previous year. The food products group comes next, with 21, and there were 15 in contracting, 13 in Coast shipping, 12 in coal-mining, 11 in metal-mining, 10 in metal trades, 8 in ship-building, 7 in public utilities, 4 each in laundries, cleaning and dyeing, printing and publishing, and pulp and paper manufacturing, 3 each in builders' materials and manufacture of wood (N.E.S.), 2 each in garment-making, oil-refining, and smelting, and 1 each in breweries, explosives and chemicals, house-furnishing, jewellery-manufacture, manufacture of leather and fur goods, paint-manufacture, and the miscellaneous group.

The Fluctuation of Employment.

In the matter of fluctuation of employment, the movement was not unlike that of the previous year. The low point was touched in January, for which month 70,030 workers (male and female) were accounted for in our returns. Each succeeding month witnessed a decided advance until midsummer, but there was a slight falling-off between July and August, and then in September came the highest figures for the year, with a total of 89,912. For the next three months the figures take rather a steep downward course, the month of December finding 73,383 persons in industrial employment, or 3,353 more at the end of the year than the beginning. In the past eight years the peak of employment has been reached three times in July, three times in August, once (in 1925) in October, and, for the year now under review, in September. Of the twenty-five groups of industries, eighteen witnessed the peak of employment in the second half of the year. With two industries, cigar-manufacturing and coal-mining, January was the month of greatest employment. Two others were at the peak in March, one in May, two in June, four in July, five in August, three in September, two in October, three in November, and one in December.

Lumbering Most Active in May.

The year 1926 was the third year in succession in which the lumbering industry arrived at its greatest activity during the month of May. The peak of employment in this industry seems now to be two or three months earlier than in former years. In all likelihood it is a case of meeting the requirements of the industry's more distant markets, which naturally wish to receive their supplies during the best building months of the year, and which are annually increasing their demands for British Columbia's lumber. An industry which was going very strongly at the end of the year was that of smelting. A curious feature of the returns for Coast shipping is the circumstance that the year's largest volume of employment was recorded in the month of March. This seems to have been an unusually busy time on the water-front, where activities were somewhat curtailed in succeeding months owing to the diversion of shipping caused by the British coal strike.

CONTENTS OF TABLES.

With regard to the tables immediately following, the general headings of such tables are given hereunder and the trades included under each heading:—

No. 1. *Breweries.*—Under this heading are tabulated mineral-water manufacturers and breweries.

No. 2. *Builders' Material, etc.*—Includes manufacturers of brick, cut stone, Portland cement, lime, tiles, and firebrick; also stone-quarries and dealers in sand, gravel, and crushed rock.

No. 3. *Cigar and Tobacco Manufacturing.*—Comprises only these trades.

No. 4. *Coal-mining.*—This group contains also the operation of coke-ovens and coal-shipping docks.

No. 5. *Coast Shipping.*—Includes the operation of passenger and freight steamships, stevedoring, tug-boats (both general and towing logs), and river navigation, but does not include the operation of vessels in the offshore trade.

No. 6. *Contracting.*—Here are grouped building trades, painting and paper-hanging, plumbing and heating, and sheet-metal works; also contractors for industrial plants, structural-steel fabricating, railway-fencing, sewers, pipes and valves, dredging, pile-driving, wharves, bridges, roofing, and automatic sprinklers. Firms making return as building contractors, constructors of dry-kilns, refuse-burners, mills, brick-furnaces, electrical contractors, hardwood and sanitary floor-layers, and bricklayers.

No. 7. *Explosives, Chemicals, etc.*—Includes the manufacture of these commodities, also the manufacture of fertilizers.

No. 8. *Food Products, Manufacture of.*—This table includes bakeries, biscuit-manufacturers, cereal-milling, creameries and dairies, fish, fruit and vegetable canneries, packing-houses, curers of ham and bacon, blending of teas; also manufacturers of candy, macaroni, syrup, jams, pickles, sauces, coffee, catsup, and spices.

No. 9. *Garment-making.*—Includes tailoring, the manufacture of buttons, pleating, embroidery, etc., jute and cotton goods, shirts, overalls, knitted goods, millinery and ladies' outfitting.

No. 10. *House Furnishings.*—Comprises firms engaged in the manufacture of furniture, beds and bedding, springs and mattresses, upholstering, and carpet and linoleum laying.

No. 11. *Jewellery, Manufacture of.*—Includes the repair as well as manufacturing of jewellery and watches and optical instruments (where same is carried on in a factory).

No. 12. *Laundries, Cleaning and Dyeing.*—Includes these industries only.

No. 13. *Leather and Fur Goods, Manufacture of.*—Comprises manufacturers of boots, shoes, gloves, harness, trunks, and leather Indian novelties; also furriers and hide and wool dealers.

No. 14. *Lumber Industries.*—In this group are included logging, logging-railways, planing-mills, sawmills, shingle-mills, and lumber-dealers.

No. 15. *Metal Trades.*—This group includes marine blacksmithing, oxy-acetylene welding, boiler-making, iron and brass foundries, garages, vulcanizing, machine and pattern shops, galvanizing and electroplating; also manufacturers of handsaws, nuts and bolts, pumps, marine engines, mill machinery, and repairs to same.

No. 16. *Metal-mining.*—Includes all metalliferous mining.

No. 17. *Miscellaneous Trades and Industries.*—Here are grouped returns from trades which are not numerous enough to warrant special categories. They include manufacturers of soap, sails, tents, awning, brooms, paper boxes, and tin containers; also cold storage.

No. 18. *Oil-refining.*—Includes also the manufacture of fish-oil.

No. 19. *Paint-manufacturing.*—Includes also white-lead corroders and varnish-manufacturers.

No. 20. *Printing and Publishing.*—This table includes the printing and publishing of newspapers, job-printing, paper-ruling, bookbinding, engraving and embossing, blue-printing, lithographing, draughting and map-publishing, and the manufacture of rubber and metal stamps.

No. 21. *Pulp and Paper Manufacturing.*—Comprises only firms engaged in that industry.

No. 22. *Ship-building.*—Comprises both wooden- and steel-ship building and repairing, also construction and repair of small craft, and salvage.

No. 23. *Smelting.*—Comprises firms engaged exclusively in that industry.

No. 24. *Street-railways, Gas, Water, Power, etc.*—This group comprises generating and distribution of light and power, manufacture of gas, dissolved acetylene and oxygen; also includes gasolene lighting and heating devices, and supply of water to municipalities.

No. 25. *Wood, Manufacture of (not elsewhere specified).*—Here are grouped manufacturers of sash and doors, interior finish, water-proof ply-wood, veneer, store and office fittings, barrels, boxes, ships' knees, ready-cut buildings, wooden pipes and tanks, wooden pulleys, wooden toys, caskets, coffins, and undertakers' supplies.

TABLE No. 1.

BREWERIES.

Returns covering 33 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$191,188 53
Clerks, Stenographers, Salesmen, etc.	66,919 06
Wage-earners (including piece-workers)	519,648 09
Total	$777,755 68

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	363	15	July	462	25
February	377	16	August	420	28
March	399	17	September	392	29
April	406	19	October	358	29
May	440	30	November	370	39
June	421	21	December	376	35

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00	.....	4	1	.....	.....
$ 6.00 to $ 6.99	.....	1	.....	.....	.....
7.00 to 7.99	.....	2	1	.....	.....
8.00 to 8.99	.....	.....	.....	.....	.....
9.00 to 9.99	.....	1	.....	.....	.....
10.00 to 10.99	.....	.....	1	.....	.....
11.00 to 11.99	3	.....	1	1	.....
12.00 to 12.99	6	4	4	.....	.....
13.00 to 13.99	.....	.....	.....	.....	.....
14.00 to 14.99	3	.....	10	.....	.....
15.00 to 15.99	11	1	8	.....	.....
16.00 to 16.99	1	1	1	.....	.....
17.00 to 17.99	2	2	4	.....	.....
18.00 to 18.99	33	.....	.....	.....	.....
19.00 to 19.99	6	.....	1	.....	.....
20.00 to 20.99	17	.....	1	.....	1
21.00 to 21.99	16	.....	3	.....	.....
22.00 to 22.99	21	.....	1	.....	.....
23.00 to 23.99	3	.....	.....	.....	.....
24.00 to 24.99	38	.....	2	.....	.....
25.00 to 25.99	29	.....	.....	.....	.....
26.00 to 26.99	10	.....	.....	.....	.....
27.00 to 27.99	120	.....	.....	.....	.....
28.00 to 28.99	32	.....	.....	.....	.....
29.00 to 29.99	7	.....	.....	.....	.....
30.00 to 34.99	76	.....	.....	.....	.....
35.00 to 39.99	25	.....	.....	.....	.....
40.00 to 44.99	12	.....	.....	.....	.....
45.00 to 49.99	9	.....	.....	.....	.....
50.00 and over	6	.....	.....	.....	.....

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	238	27
Great Britain and Ireland	207	11
United States of America	26	1
Australasia	1	.....
Belgium	3	.....
France	1	.....
Italy	21	.....
Germany	5	.....
Austria and Hungary	4	.....
Norway, Sweden, Denmark, Finland, etc.	11	1
Russia or other Slav country	2	.....
Other European country	6	.....
China	.....	.....
Hindustan	.....	.....
Japan	3	.....
All other countries	.....	.....
Nationality not stated	20	.....

TABLE No. 2.

BUILDERS' MATERIAL—PRODUCERS OF.

Returns covering 72 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 203,576 10
Clerks, Stenographers, Salesmen, etc.	108,150 50
Wage-earners (including piece-workers)	1,341,219 85
Total	$1,652,946 45

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	847		July	1,196	
February	876		August	1,142	
March	957		September	1,123	
April	1,136		October	1,077	
May	1,195		November	1,007	
June	1,185		December	933	

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					
$6.00 to $ 6.99					
7.00 to 7.99		1			
8.00 to 8.99		1			1
9.00 to 9.99					
10.00 to 10.99	2	2			1
11.00 to 11.99		2			1
12.00 to 12.99		10			
13.00 to 13.99					1
14.00 to 14.99	45	2			
15.00 to 15.99	19	2			3
16.00 to 16.99	62				
17.00 to 17.99	13				
18.00 to 18.99	40				
19.00 to 19.99	71				1
20.00 to 20.99	51				
21.00 to 21.99	151				
22.00 to 22.99	104				
23.00 to 23.99	29				
24.00 to 24.99	165				
25.00 to 25.99	21				
26.00 to 26.99	77				
27.00 to 27.99	78				1
28.00 to 28.99	29				
29.00 to 29.99	30				
30.00 to 34.99	138				
35.00 to 39.99	60				
40.00 to 44.99	93				
45.00 to 49.99	56				
50.00 and over	54				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	395	
Great Britain and Ireland	484	
United States of America	42	
Australasia	2	
Belgium	1	
France	5	
Italy	79	
Germany	4	
Austria and Hungary	12	
Norway, Sweden, Denmark, Finland, etc.	54	
Russia or other Slav country	38	
Other European country	32	
China	265	
Hindustan	6	
Japan	4	
All other countries	6	
Nationality not stated	2	

TABLE No. 3.

CIGAR AND TOBACCO MANUFACTURING.

Returns covering 7 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 17,326 83
Clerks, Stenographers, Salesmen, etc.	10,438 28
Wage-earners (including piece-workers)	27,957 21
Total	$ 55,722 32

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	20	27	July	13	25
February	17	25	August	12	29
March	17	25	September	13	24
April	14	25	October	15	25
May	15	23	November	15	24
June	12	25	December	18	27

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					
$ 6.00 to $ 6.99					
7.00 to 7.99					
8.00 to 8.99					3
9.00 to 9.99			1		
10.00 to 10.99				1	
11.00 to 11.99					
12.00 to 12.99					
13.00 to 13.99	2		1		
14.00 to 14.99	1				
15.00 to 15.99					
16.00 to 16.99			1		
17.00 to 17.99			11		
18.00 to 18.99			9		
19.00 to 19.99	1		1		
20.00 to 20.99	2		3		
21.00 to 21.99	2		1		
22.00 to 22.99			2		
23.00 to 23.99	2				
24.00 to 24.99	5				
25.00 to 25.99	2				
26.00 to 26.99					
27.00 to 27.99	1				
28.00 to 28.99					
29.00 to 29.99	1				
30.00 to 34.99					
35.00 to 39.99					
40.00 to 44.99					
45.00 to 49.99					
50.00 and over					

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	11	8
Great Britain and Ireland	3	13
United States of America	3	2
Australasia		
Belgium		
France		
Italy		3
Germany		
Austria and Hungary		
Norway, Sweden, Denmark, Finland, etc.	2	
Russia or other Slav country	3	3
Other European country	1	1
China		
Hindustan		
Japan		
All other countries		
Nationality not stated		

TABLE No. 4.

COAL-MINING.

Returns covering 27 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 346,472 53
Clerks, Stenographers, Salesmen, etc.	183,291 76
Wages-earners (including piece-workers)	6,317,992 28
Total	$ 6,847,756 57

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	4,869		July	4,349	
February	4,785		August	4,449	
March	4,645		September	4,501	
April	4,219		October	4,567	
May	4,272		November	4,830	
June	4,357		December	4,758	

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					
$ 6.00 to $ 6.99		16			
7.00 to 7.99					7
8.00 to 8.99		3			
9.00 to 9.99		8			
10.00 to 10.99		26			
11.00 to 11.99		7			
12.00 to 12.99	34	34			2
13.00 to 13.99	11	27			
14.00 to 14.99	97	3			2
15.00 to 15.99	38	18			
16.00 to 16.99	23	12			
17.00 to 17.99	28	1			
18.00 to 18.99	97	19			
19.00 to 19.99	58	6			
20.00 to 20.99	99	2			
21.00 to 21.99	109	15			
22.00 to 22.99	62	3			
23.00 to 23.99	131				
24.00 to 24.99	558	2			
25.00 to 25.99	401				
26.00 to 26.99	73				
27.00 to 27.99	367				
28.00 to 28.99	392				
29.00 to 29.99	116				
30.00 to 34.99	1,123				
35.00 to 39.99	510				
40.00 to 44.99	316				
45.00 to 49.99	159				
50.00 and over	155				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	770	
Great Britain and Ireland	2,540	
United States of America	82	
Australasia	1	
Belgium	50	
France	19	
Italy	383	
Germany	20	
Austria and Hungary	73	
Norway, Sweden, Denmark, Finland, etc.	354	
Russia or other Slav country	108	
Other European country	89	
China	457	
Hindustan		
Japan	63	
All other countries	1	
Nationality not stated	142	

TABLE No. 5.

COAST SHIPPING.

Returns covering 146 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 757,379 69
Clerks, Stenographers, Salesmen, etc.	733,861 63
Wage-earners (including piece-workers)	7,023,998 09
Total	$ 8,515,239 41

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	6,204	13	July	6,496	26
February	6,196	15	August	6,429	26
March	6,784	15	September	6,406	20
April	6,710	16	October	6,324	17
May	6,363	18	November	6,636	16
June	6,431	25	December	6,083	17

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					
$ 6.00 to $ 6.99		1			
7.00 to 7.99					
8.00 to 8.99	20				
9.00 to 9.99	22				
10.00 to 10.99	1	1			
11.00 to 11.99	100	4			
12.00 to 12.99	11	8			
13.00 to 13.99	3				
14.00 to 14.99	5				
15.00 to 15.99	198				
16.00 to 16.99	138				
17.00 to 17.99	194				
18.00 to 18.99	123		2		
19.00 to 19.99	169		13		
20.00 to 20.99	51				
21.00 to 21.99	236				1
22.00 to 22.99	312				
23.00 to 23.99	225				
24.00 to 24.99	714		1		
25.00 to 25.99	410				
26.00 to 26.99	242		3		
27.00 to 27.99	171		1		
28.00 to 28.99	265				
29.00 to 29.99	44		4		
30.00 to 34.99	988				
35.00 to 39.99	843		1		1
40.00 to 44.99	639				
45.00 to 49.99	220				
50.00 and over	260				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	2,628	10
Great Britain and Ireland	3,616	8
United States of America	211	7
Australasia	48	
Belgium	8	
France	18	
Italy	111	
Germany	13	
Austria and Hungary	15	
Norway, Sweden, Denmark, Finland, etc.	263	
Russia or other Slav country	59	
Other European country	4	
China	422	
Hindustan		
Japan	79	
All other countries	18	
Nationality not stated	196	

TABLE No. 6.

CONTRACTING.

Returns covering 1,191 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 1,957,058 62
Clerks, Stenographers, Salesmen, etc	1,425,515 46
Wage-earners (including piece-workers)	11,663,913 99
Total	$15,046,488 07

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	7,036	44	July	10,226	72
February	7,407	44	August	10,666	73
March	8,325	44	September	10,208	61
April	9,154	45	October	9,414	60
May	9,359	49	November	8,488	57
June	9,824	64	December	7,249	56

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00	1	9			18
$ 6.00 to $ 6.99		10			23
7.00 to 7.99	1	12			16
8.00 to 8.99	10	14			23
9.00 to 9.99	5	15			10
10.00 to 10.99	12	20			24
11.00 to 11.99	10	6	3		17
12.00 to 12.99	37	8	1		30
13.00 to 13.99	13	1			4
14.00 to 14.99	14	7	1		8
15.00 to 15.99	89	9	10		10
16.00 to 16.99	56	4	2	1	7
17.00 to 17.99	314	6	11		6
18.00 to 18.99	86	5	12		5
19.00 to 19.99	377	2			1
20.00 to 20.99	413	1	8		6
21.00 to 21.99	659	3	2		4
22.00 to 22.99	1,159	3	6		4
23.00 to 23.99	1,236	1	7		
24.00 to 24.99	3,143		1		
25.00 to 25.99	430		4		
26.00 to 26.99	540		1		2
27.00 to 27.99	804		1		1
28.00 to 28.99	425		2		1
29.00 to 29.99	130				
30.00 to 34.99	1,167		2		1
35.00 to 39.99	2,188				
40.00 to 44.99	1,276				
45.00 to 49.99	461				
50.00 and over	376				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	6,097	37
Great Britain and Ireland	5,656	22
United States of America	498	1
Australasia	47	
Belgium	19	
France	59	
Italy	333	
Germany	37	
Austria and Hungary	71	
Norway, Sweden, Denmark, Finland, etc	947	1
Russia or other Slav country	389	
Other European country	69	
China	22	
Hindustan		
Japan	8	
All other countries	1	
Nationality not stated	611	

TABLE No. 7.

EXPLOSIVES, CHEMICALS, ETC.

Returns covering 9 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 69,849 25
Clerks, Stenographers, Salesmen, etc	110,039 17
Wage-earners (including piece-workers)	288,711 88
Total	$468,600 30

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	153	1	July	355	4
February	161	2	August	364	4
March	196	3	September	354	4
April	236	2	October	324	3
May	321	6	November	192	3
June	335	3	December	146	1

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					
$ 6.00 to $ 6.99					
7.00 to 7.99					
8.00 to 8.99					
9.00 to 9.99					
10.00 to 10.99					
11.00 to 11.99					
12.00 to 12.99	1		2		
13.00 to 13.99	1				
14.00 to 14.99	53	2	1		
15.00 to 15.99	9		3		
16.00 to 16.99	8				
17.00 to 17.99	18				
18.00 to 18.99	16				
19.00 to 19.99	39				
20.00 to 20.99	34				
21.00 to 21.99	13				
22.00 to 22.99	11				
23.00 to 23.99	15				
24.00 to 24.99	28				
25.00 to 25.99	31				
26.00 to 26.99	8				
27.00 to 27.99	22				
28.00 to 28.99	7				
29.00 to 29.99	9				
30.00 to 34.99	21				
35.00 to 39.99	5				
40.00 to 44.99	14				
45.00 to 49.99	9				
50.00 and over	8				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	115	3
Great Britain and Ireland	97	1
United States of America	4	
Australasia	1	
Belgium		
France		
Italy		
Germany		
Austria and Hungary		
Norway, Sweden, Denmark, Finland, etc	14	
Russia or other Slav country	1	
Other European country		
China	98	
Hindustan		
Japan	51	
All other countries		
Nationality not stated		

TABLE No. 8.

FOOD PRODUCTS—MANUFACTURE OF.

Returns covering 441 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 1,301,107 49
Clerks, Stenographers, Salesmen, etc.	1,174,185 78
Wage-earners (including piece-workers)	7,819,317 24
Total	$10,294,610 51

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	3,301	721	July	7,575	2,903
February	3,262	680	August	7,938	3,252
March	3,959	652	September	8,217	2,935
April	4,529	717	October	6,033	2,231
May	5,044	850	November	4,982	1,380
June	6,542	2,029	December	3,909	846

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00	.....	11	16	15	20
$ 6.00 to $ 6.99	2	19	14	16	2
7.00 to 7.99	.....	9	158	33	7
8.00 to 8.99	2	12	135	28	8
9.00 to 9.99	2	8	67	39	.....
10.00 to 10.99	6	16	25	36	5
11.00 to 11.99	5	24	63	27	2
12.00 to 12.99	33	39	263	75	3
13.00 to 13.99	27	11	537	159	1
14.00 to 14.99	58	28	609	37	2
15.00 to 15.99	164	30	334	14	1
16.00 to 16.99	117	11	362	4	.....
17.00 to 17.99	225	11	158	8	2
18.00 to 18.99	357	7	131	8	1
19.00 to 19.99	878	7	111	2	.....
20.00 to 20.99	497	10	104	3	1
21.00 to 21.99	347	7	151	7	.....
22.00 to 22.99	484	1	62	.....	1
23.00 to 23.99	350	1	28	.....	.....
24.00 to 24.99	520	3	80	1	.....
25.00 to 25.99	657	9	48	1	.....
26.00 to 26.99	236	.....	24	1	.....
27.00 to 27.99	461	.....	24	.....	.....
28.00 to 28.99	258	.....	8	.....	.....
29.00 to 29.99	177	.....	12	.....	.....
30.00 to 34.99	1,112	2	35	1	.....
35.00 to 39.99	659	.....	12	.....	.....
40.00 to 44.99	259	.....	3	.....	.....
45.00 to 49.99	97	.....	.....	.....	.....
50.00 and over	95	.....	.....	.....	.....

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	3,518	2,173
Great Britain and Ireland	2,512	921
United States of America	165	119
Australasia	19	3
Belgium	14	4
France	13	20
Italy	66	114
Germany	32	45
Austria and Hungary	59	66
Norway, Sweden, Denmark, Finland, etc.	647	66
Russia or other Slav country	43	67
Other European country	34	.....
China	2,068	16
Hindustan	8	.....
Japan	610	214
All other countries	14	2
Nationality not stated	227	123

TABLE No. 9

GARMENT-MAKING.

Returns covering 82 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$158,520 12
Clerks, Stenographers, Salesmen, etc.	108,793 63
Wage-earners (including piece-workers)	616,347 88
Total	$883,661 63

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	290	235	July	384	267
February	348	261	August	407	295
March	400	281	September	419	313
April	420	281	October	446	317
May	423	286	November	407	299
June	391	272	December	338	267

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00	.....	2	.....	1	16
$ 6.00 to $ 6.99	.....	3	1	5	1
7.00 to 7.99	1	1	2	.....	.....
8.00 to 8.99	3	5	4	1	5
9.00 to 9.99	.....	4	2	1	2
10.00 to 10.99	1	1	6	10	8
11.00 to 11.99	4	1	8	1	3
12.00 to 12.99	6	2	10	11	1
13.00 to 13.99	3	.....	28	4	1
14.00 to 14.99	2	.....	102	6	1
15.00 to 15.99	13	.....	67	5	1
16.00 to 16.99	5	.....	40	1	.....
17.00 to 17.99	3	.....	33	.....	.....
18.00 to 18.99	8	.....	45	.....	.....
19.00 to 19.99	7	.....	15	.....	.....
20.00 to 20.99	11	.....	28	.....	.....
21.00 to 21.99	.....	.....	10	.....	.....
22.00 to 22.99	6	.....	11	.....	.....
23.00 to 23.99	7	.....	6	.....	.....
24.00 to 24.99	1	.....	2	.....	.....
25.00 to 25.99	14	.....	18	.....	.....
26.00 to 26.99	2	.....	9	.....	.....
27.00 to 27.99	10	.....	3	.....	.....
28.00 to 28.99	1	.....	1	.....	.....
29.00 to 29.99	1	.....	1	.....	.....
30.00 to 34.99	23	.....	.....	.....	.....
35.00 to 39.99	40	.....	5	.....	.....
40.00 to 44.99	24	.....	.....	.....	.....
45.00 to 49.99	8	.....	.....	.....	.....
50.00 and over	13	.....	.....	.....	.....

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	198	150
Great Britain and Ireland	149	133
United States of America	5	12
Australasia	2	.....
Belgium	2	1
France	3	2
Italy	1	.....
Germany	2	6
Austria and Hungary	2	.....
Norway, Sweden, Denmark, Finland, etc.	11	7
Russia or other Slav country	17	7
Other European country	1	7
China	17	7
Hindustan	.....	1
Japan	8	2
All other countries	.....	.....
Nationality not stated	22	4

TABLE No. 10.

HOUSE FURNISHINGS—MANUFACTURING OF.

Returns covering 42 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$106,425 20
Clerks, Stenographers, Salesmen, etc.	76,420 65
Wage-earners (including piece-workers)	463,558 59
Total	$646,404 44

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	349	37	July	374	40
February	346	40	August	373	41
March	352	39	September	384	45
April	350	44	October	397	47
May	363	45	November	402	49
June	373	43	December	400	47

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00		1			1
$ 6.00 to $ 6.99					1
7.00 to 7.99		4			6
8.00 to 8.99		2			
9.00 to 9.99		1			3
10.00 to 10.99	1	2			
11.00 to 11.99	1	6		1	2
12.00 to 12.99		2	1		8
13.00 to 13.99	6	18	4		2
14.00 to 14.99	6		5		
15.00 to 15.99	11		7		
16.00 to 16.99	14	3	2		1
17.00 to 17.99	26	1	6		
18.00 to 18.99	4		7		
19.00 to 19.99	36		3		
20.00 to 20.99	9	1	8		
21.00 to 21.99	13				
22.00 to 22.99	22		1		
23.00 to 23.99	3		1		
24.00 to 24.99	15				
25.00 to 25.99	19				
26.00 to 26.99	22				
27.00 to 27.99	7				
28.00 to 28.99	23				
29.00 to 29.99	7				
30.00 to 34.99	62				
35.00 to 39.99	32				
40.00 to 44.99	9				
45.00 to 49.99	1				
50.00 and over	1				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	184	18
Great Britain and Ireland	224	30
United States of America	5	
Australasia	2	
Belgium		
France	1	
Italy	1	
Germany		
Austria and Hungary		
Norway, Sweden, Denmark, Finland, etc.	10	
Russia or other Slav country	4	2
Other European country	2	2
China		
Hindustan		
Japan		
All other countries		
Nationality not stated		

TABLE No. 11.

JEWELLERY—MANUFACTURING OF.

Returns covering 9 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 31,280 00
Clerks, Stenographers, Salesmen, etc.	95,154 50
Wage-earners (including piece-workers)	110,547 28
Total	$236,981 78

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	68	2	July	67	2
February	69	2	August	65	2
March	67	2	September	69	2
April	67	2	October	69	2
May	66	2	November	71	2
June	67	2	December	71	2

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					1
$ 6.00 to $ 6.99		1			1
7.00 to 7.99					
8.00 to 8.99		4			
9.00 to 9.99					
10.00 to 10.99					1
11.00 to 11.99					
12.00 to 12.99		1	1		
13.00 to 13.99					
14.00 to 14.99					
15.00 to 15.99			1		1
16.00 to 16.99	1				
17.00 to 17.99					1
18.00 to 18.99	2				
19.00 to 19.99					
20.00 to 20.99	2				
21.00 to 21.99					
22.00 to 22.99	1				
23.00 to 23.99	1				
24.00 to 24.99					
25.00 to 25.99	2				
26.00 to 26.99					
27.00 to 27.99	2				
28.00 to 28.99	1				
29.00 to 29.99					
30.00 to 34.99	13				
35.00 to 39.99	12				
40.00 to 44.99	11				
45.00 to 49.99	3				
50.00 and over	10				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	28	1
Great Britain and Ireland	29	1
United States of America	1	
Australasia		
Belgium		
France		
Italy		1
Germany		
Austria and Hungary		
Norway, Sweden, Denmark, Finland, etc.	2	
Russia or other Slav country	1	
Other European country	1	
China		
Hindustan		
Japan		
All other countries		
Nationality not stated	10	

TABLE No. 12.

LAUNDRIES, CLEANING AND DYEING.

Returns covering 77 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 122,097 98
Clerks, Stenographers, Salesmen, etc	186,644 05
Wage-earners (including piece-workers)	1,099,832 41
Total	$1,408,574 44

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	458	807	July	500	951
February	465	810	August	507	931
March	462	821	September	498	917
April	467	829	October	479	856
May	494	840	November	443	849
June	489	859	December	441	852

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00			1		
$ 6.00 to $ 6.99		4	6		
7.00 to 7.99					
8.00 to 8.99	4			14	3
9.00 to 9.99		2	3	26	9
10.00 to 10.99	3		14	18	5
11.00 to 11.99		1	1	28	11
12.00 to 12.99	2	3	22	8	10
13.00 to 13.99	5		350		1
14.00 to 14.99	1	4	140	1	
15.00 to 15.99	10	1	144		
16.00 to 16.99	5		61		
17.00 to 17.99	4	1	25		
18.00 to 18.99	8	1	50		
19.00 to 19.99	4		8		
20.00 to 20.99	75		19		
21.00 to 21.99	13		6		
22.00 to 22.99	28		7		
23.00 to 23.99	9				
24.00 to 24.99	39				
25.00 to 25.99	70		1		
26.00 to 26.99	13		1		
27.00 to 27.99	47				
28.00 to 28.99	17		1		
29.00 to 29.99	11				
30.00 to 34.99	90		2		
35.00 to 39.99	27				
40.00 to 44.99	16		1		
45.00 to 49.99	4				
50.00 and over	15				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	152	371
Great Britain and Ireland	262	484
United States of America	10	26
Australasia		
Belgium	1	2
France	4	8
Italy	2	17
Germany	1	1
Austria and Hungary		
Norway, Sweden, Denmark, Finland, etc.	7	29
Russia or other Slav country	6	16
Other European country		1
China	43	1
Hindustan	1	
Japan	10	5
All other countries		13
Nationality not stated	17	10

TABLE No. 13.

LEATHER AND FUR GOODS—MANUFACTURING OF.

Returns covering 58 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 67,109 00
Clerks, Stenographers, Salesmen, etc	63,482 15
Wage-earners (including piece-workers)	328,307 85
Total	$458,899 00

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	223	73	July	225	85
February	222	74	August	224	89
March	223	75	September	244	97
April	222	76	October	252	90
May	219	80	November	260	97
June	224	80	December	243	98

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					1
$ 6.00 to $ 6.99					
7.00 to 7.99		2		1	1
8.00 to 8.99				2	10
9.00 to 9.99	3	3	1	2	1
10.00 to 10.99	1			3	4
11.00 to 11.99		1		4	1
12.00 to 12.99	1	1	5	1	2
13.00 to 13.99	1	1	2		1
14.00 to 14.99	4		10	1	
15.00 to 15.99	4		8		1
16.00 to 16.99	3	2	3		
17.00 to 17.99	3		9		
18.00 to 18.99	7		16		
19.00 to 19.99	5		6		
20.00 to 20.99	11		2		1
21.00 to 21.99	8		6		
22.00 to 22.99	15		7		
23.00 to 23.99	5		2		
24.00 to 24.99	11		1		
25.00 to 25.99	19		3		
26.00 to 26.99	14		3		
27.00 to 27.99	15		2		
28.00 to 28.99	29				
29.00 to 29.99	4				
30.00 to 34.99	58				
35.00 to 39.99	11				
40.00 to 44.99	4				
45.00 to 49.99					
50.00 and over	3				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	98	47
Great Britain and Ireland	114	48
United States of America	18	5
Australasia	1	
Belgium		
France	9	
Italy	10	1
Germany	3	
Austria and Hungary		
Norway, Sweden, Denmark, Finland, etc.	13	3
Russia or other Slav country	4	1
Other European country	4	
China	4	
Hindustan		
Japan	2	
All other countries		
Nationality not stated		

TABLE No. 14.

LUMBER INDUSTRIES.

Returns covering 974 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 2,169,255 05
Clerks, Stenographers, Salesmen, etc.	1,087,782 91
Wage-earners (including piece-workers)	31,569,313 77
Total	$34,826,351 73

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	21,423	48	July	25,454	55
February	23,513	52	August	24,978	54
March	25,764	55	September	25,644	51
April	26,377	58	October	25,671	50
May	27,141	60	November	24,917	48
June	26,649	58	December	20,726	47

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00		1			
$ 6.00 to $ 6.99		1			
7.00 to 7.99		6			
8.00 to 8.99	1	3			
9.00 to 9.99	2	22			
10.00 to 10.99	11	11			
11.00 to 11.99	24	9			
12.00 to 12.99	123	61	6		
13.00 to 13.99	271	22	2		
14.00 to 14.99	564	43	4		
15.00 to 15.99	611	9	1		
16.00 to 16.99	718	56	3		
17.00 to 17.99	602	4	12		
18.00 to 18.99	1,277	25	21		
19.00 to 19.99	5,411	23	8	1	
20.00 to 20.99	1,261	12	5		
21.00 to 21.99	3,064	6	4		
22.00 to 22.99	1,356	1	1		
23.00 to 23.99	1,152	1	2		
24.00 to 24.99	3,903	2	4	1	
25.00 to 25.99	1,397	1	3		
26.00 to 26.99	924				
27.00 to 27.99	1,630				
28.00 to 28.99	977				
29.00 to 29.99	605				
30.00 to 34.99	3,093		4		
35.00 to 39.99	1,802		2		
40.00 to 44.99	1,051		1		
45.00 to 49.99	729				
50.00 and over	732				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	10,724	44
Great Britain and Ireland	4,487	9
United States of America	1,760	7
Australasia	46	
Belgium	94	1
France	245	
Italy	425	
Germany	177	
Austria and Hungary	336	1
Norway, Sweden, Denmark, Finland, etc.	4,823	10
Russia or other Slav country	1,278	2
Other European country	182	
China	4,203	
Hindustan	725	
Japan	2,376	3
All other countries	43	
Nationality not stated	866	

TABLE No. 15.

METAL TRADES.

Returns covering 597 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$1,657,963 45
Clerks, Stenographers, Salesmen, etc.	1,076,866 99
Wage-earners (including piece-workers)	4,651,862 40
Total	$7,386,692 84

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	3,400	77	July	3,765	125
February	3,530	87	August	3,828	125
March	3,663	91	September	3,988	121
April	3,772	93	October	3,889	110
May	3,699	100	November	3,779	90
June	3,940	107	December	3,729	91

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00	1	41	5	2	31
$ 6.00 to $ 6.99	1	19	1		34
7.00 to 7.99	4	28	3		24
8.00 to 8.99	9	26	1		25
9.00 to 9.99	10	18			10
10.00 to 10.99	30	37	4		24
11.00 to 11.99	14	17			11
12.00 to 12.99	42	30	1		20
13.00 to 13.99	100	11			12
14.00 to 14.99	23	7	2		5
15.00 to 15.99	81	24	7		25
16.00 to 16.99	39	24	30		7
17.00 to 17.99	61	41	19		5
18.00 to 18.99	68	16	16		7
19.00 to 19.99	80	6	5		4
20.00 to 20.99	173	2	12		3
21.00 to 21.99	150		6		1
22.00 to 22.99	256	1	8		4
23.00 to 23.99	271		1		
24.00 to 24.99	277		3		
25.00 to 25.99	258				
26.00 to 26.99	108		3		1
27.00 to 27.99	135		1		1
28.00 to 28.99	142				
29.00 to 29.99	85				
30.00 to 34.99	964				
35.00 to 39.99	428				
40.00 to 44.99	172				
45.00 to 49.99	79				
50.00 and over	77				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	2,297	66
Great Britain and Ireland	1,779	45
United States of America	257	11
Australasia	11	1
Belgium	8	
France	22	
Italy	37	3
Germany	8	
Austria and Hungary	4	
Norway, Sweden, Denmark, Finland, etc.	91	
Russia or other Slav country	32	1
Other European country	11	
China	2	
Hindustan	1	
Japan	15	
All other countries	4	
Nationality not stated	52	

TABLE No. 16.

METAL-MINING.

Returns covering 260 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 496,996 80
Clerks, Stenographers, Salesmen, etc	433,340 30
Wage-earners (including piece-workers)	7,670,049 99
Total	$8,600,387 09

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	4,193	36	July	5,114	39
February	4,182	36	August	4,254	40
March	4,318	39	September	5,233	39
April	4,623	36	October	4,271	40
May	4,879	39	November	5,106	41
June	4,960	39	December	4,613	41

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00		1			
$ 6.00 to $ 6.99					
7.00 to 7.99					
8.00 to 8.99					
9.00 to 9.99					
10.00 to 10.99					
11.00 to 11.99					
12.00 to 12.99	4		2		
13.00 to 13.99			1		
14.00 to 14.99	1	1			
15.00 to 15.99	13		1		
16.00 to 16.99	7				
17.00 to 17.99			3		
18.00 to 18.99	16		3		
19.00 to 19.99	67		3		
20.00 to 20.99	14	1	1		
21.00 to 21.99	17		4		
22.00 to 22.99	36		3		
23.00 to 23.99	74		3		
24.00 to 24.99	123		1		
25.00 to 25.99	97		11		
26.00 to 26.99	104		4	1	
27.00 to 27.99	459		4		
28.00 to 28.99	330		1		
29.00 to 29.99	879				
30.00 to 34.99	2,231	3	1		
35.00 to 39.99	1,557				
40.00 to 44.99	416				
45.00 to 49.99	423				
50.00 and over	78				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	2,150	24
Great Britain and Ireland	1,713	13
United States of America	312	4
Australasia	11	
Belgium	14	
France	26	
Italy	296	
Germany	31	
Austria and Hungary	85	
Norway, Sweden, Denmark, Finland, etc.	947	4
Russia or other Slav country	438	
Other European country	56	
China	67	
Hindustan	1	
Japan	17	1
All other countries	13	
Nationality not stated	115	1

TABLE No. 17.

MISCELLANEOUS TRADES AND INDUSTRIES.

Returns covering 117 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 397,536 78
Clerks, Stenographers, Salesmen, etc	372,018 61
Wage-earners (including piece-workers)	1,436,063 28
Total	$2,205,618 67

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	830	266	July	1,053	334
February	879	280	August	1,071	328
March	896	296	September	1,079	291
April	923	288	October	1,022	313
May	956	310	November	1,042	307
June	1,004	335	December	994	308

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00		1	1		
$ 6.00 to $ 6.99		7			3
7.00 to 7.99		4		1	
8.00 to 8.99	1	1	2	18	14
9.00 to 9.99	5	35		1	1
10.00 to 10.99	13	17	7	4	6
11.00 to 11.99	6	5			2
12.00 to 12.99	12	6	9	3	4
13.00 to 13.99	6	4	6	3	
14.00 to 14.99	24	6	139	9	2
15.00 to 15.99	47	6	28		
16.00 to 16.99	11	1	24		
17.00 to 17.99	23	1	11		
18.00 to 18.99	68	2	11		
19.00 to 19.99	53	1	17		
20.00 to 20.99	44	1	14		
21.00 to 21.99	33		4		
22.00 to 22.99	136		4		
23.00 to 23.99	145				
24.00 to 24.99	89		1		
25.00 to 25.99	59		2		
26.00 to 26.99	26				
27.00 to 27.99	54		2		
28.00 to 28.99	81				
29.00 to 29.99	10				
30.00 to 34.99	113		2		
35.00 to 39.99	51				
40.00 to 44.99	28				
45.00 to 49.99	7		1		
50.00 and over	8				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	508	180
Great Britain and Ireland	611	140
United States of America	35	5
Australasia		
Belgium	3	
France	4	
Italy	10	3
Germany	3	
Austria and Hungary	4	
Norway, Sweden, Denmark, Finland, etc.	20	1
Russia or other Slav country	19	4
Other European country	2	
China	9	
Hindustan		
Japan	16	1
All other countries	1	
Nationality not stated		

TABLE No. 18.

OIL-REFINING.

Returns covering 21 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 85,542 68
Clerks, Stenographers, Salesmen, etc.	190,884 31
Wage-earners (including piece-workers)	901,960 31
Total	$1,178,387 30

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	615	8	July	804	9
February	547	8	August	809	9
March	540	8	September	761	9
April	564	8	October	693	9
May	583	8	November	574	12
June	692	11	December	513	9

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					
$ 6.00 to $ 6.99					
7.00 to 7.99					
8.00 to 8.99					
9.00 to 9.99					
10.00 to 10.99					
11.00 to 11.99					
12.00 to 12.99	1	8			
13.00 to 13.99		2			
14.00 to 14.99					
15.00 to 15.99	4				
16.00 to 16.99	1				
17.00 to 17.99	2				
18.00 to 18.99	33		1		
19.00 to 19.99	1				
20.00 to 20.99	9				
21.00 to 21.99	9		1		
22.00 to 22.99	62		2	3	
23.00 to 23.99	22				
24.00 to 24.99	71		3		
25.00 to 25.99	55		4		
26.00 to 26.99	14				
27.00 to 27.99	38				
28.00 to 28.99	25				
29.00 to 29.99	245				
30.00 to 34.99	182				
35.00 to 39.99	116				
40.00 to 44.99	52				
45.00 to 49.99	18				
50.00 and over	83				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	521	7
Great Britain and Ireland	425	4
United States of America	38	
Australasia	4	
Belgium		
France		
Italy	10	
Germany	3	
Austria and Hungary	17	
Norway, Sweden, Denmark, Finland, etc.	87	
Russia or other Slav country	13	
Other European country		
China		
Hindustan		
Japan	1	
All other countries	1	
Nationality not stated		3

TABLE No. 19.

PAINT-MANUFACTURING.

Returns covering 9 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 64,536 56
Clerks, Stenographers, Salesmen, etc.	62,579 50
Wage-earners (including piece-workers)	96,332 41
Total	$223,448 47

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	76	10	July	94	11
February	86	10	August	90	11
March	94	11	September	88	11
April	97	11	October	86	11
May	100	12	November	87	11
June	101	12	December	88	11

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					
$ 6.00 to $ 6.99					
7.00 to 7.99		2			
8.00 to 8.99		8			
9.00 to 9.99		3			
10.00 to 10.99	1	4		1	
11.00 to 11.99	5	2			
12.00 to 12.99	4		1		
13.00 to 13.99	5				
14.00 to 14.99	3		4		
15.00 to 15.99	2		5		
16.00 to 16.99	3				
17.00 to 17.99	4	1			
18.00 to 18.99	5				
19.00 to 19.99	2		1		
20.00 to 20.99	5				
21.00 to 21.99					
22.00 to 22.99	9				
23.00 to 23.99	4				
24.00 to 24.99	4				
25.00 to 25.99	5				
26.00 to 26.99	5				
27.00 to 27.99	2				
28.00 to 28.99	2				
29.00 to 29.99					
30.00 to 34.99	5				
35.00 to 39.99	3				
40.00 to 44.99	3				
45.00 to 49.99					
50.00 and over					

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	67	9
Great Britain and Ireland	39	3
United States of America	2	
Australasia	1	
Belgium		
France	1	
Italy	1	
Germany		
Austria and Hungary		
Norway, Sweden, Denmark, Finland, etc.	1	
Russia or other Slav country		
Other European country		
China		
Hindustan		
Japan		
All other countries		
Nationality not stated		

TABLE No. 20.

PRINTING AND PUBLISHING.

Returns covering 126 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 462,550 20
Clerks, Stenographers, Salesmen, etc.	886,980 70
Wage-earners (including piece-workers)	1,930,297 16
Total	$3,279,828 06

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	1,064	123	July	1,051	141
February	1,051	129	August	1,045	129
March	1,073	144	September	1,078	158
April	1,068	128	October	1,092	145
May	1,062	127	November	1,082	153
June	1,048	133	December	1,034	153

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00		5			5
$ 6.00 to $ 6.99		13			5
7.00 to 7.99	4	12		6	14
8.00 to 8.99	2	13	1	3	10
9.00 to 9.99	2	4	2		7
10.00 to 10.99	10	5	2	5	17
11.00 to 11.99	3	4	1	1	5
12.00 to 12.99	16	15	1		21
13.00 to 13.99	13	1	4		2
14.00 to 14.99	15	4	15	4	6
15.00 to 15.99	7	2	26	4	10
16.00 to 16.99	8		6		7
17.00 to 17.99	11	1	3		2
18.00 to 18.99	12	1	9		7
19.00 to 19.99	4		10		1
20.00 to 20.99	26		8		3
21.00 to 21.99	11		31		4
22.00 to 22.99	9		2		3
23.00 to 23.99	7		4		
24.00 to 24.99	17		3		3
25.00 to 25.99	26		3		
26.00 to 26.99	6		1		
27.00 to 27.99	12		2		1
28.00 to 28.99	5				2
29.00 to 29.99	3				1
30.00 to 34.99	39		1		6
35.00 to 39.99	54				2
40.00 to 44.99	133		1		
45.00 to 49.99	262				
50.00 and over	169				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	601	102
Great Britain and Ireland	393	61
United States of America	44	4
Australasia	8	
Belgium	2	
France	1	
Italy	3	
Germany	1	
Austria and Hungary	3	
Norway, Sweden, Denmark, Finland, etc.	8	2
Russia or other Slav country	6	
Other European country		1
China	21	
Hindustan		
Japan	34	2
All other countries		
Nationality not stated	94	10

TABLE No. 21.

PULP AND PAPER—MANUFACTURE OF.

Returns covering 13 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 468,509 80
Clerks, Stenographers, Salesmen, etc.	278,804 00
Wage-earners (including piece-workers)	5,542,012 07
Total	$6,289,325 87

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	2,307	76	July	3,018	77
February	2,431	70	August	2,942	77
March	2,476	71	September	2,978	76
April	2,523	73	October	3,147	81
May	2,607	73	November	3,075	76
June	2,760	75	December	2,880	81

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00				1	
$ 6.00 to $ 6.99					
7.00 to 7.99			1		
8.00 to 8.99			1		
9.00 to 9.99					
10.00 to 10.99					
11.00 to 11.99			1	1	
12.00 to 12.99			12	6	1
13.00 to 13.99			2		
14.00 to 14.99			1	13	
15.00 to 15.99	24		7		
16.00 to 16.99	10		7		
17.00 to 17.99	128		2		
18.00 to 18.99	175		3		
19.00 to 19.99	101	3	2		1
20.00 to 20.99	43		19		1
21.00 to 21.99	228	2	5		
22.00 to 22.99	36				
23.00 to 23.99	559	16	2		
24.00 to 24.99	312	5			
25.00 to 25.99	279	3	5		
26.00 to 26.99	83				
27.00 to 27.99	58		1		
28.00 to 28.99	125		2		
29.00 to 29.99	38				
30.00 to 34.99	221		5		
35.00 to 39.99	410		1		
40.00 to 44.99	61		1		
45.00 to 49.99	44		1		
50.00 and over	125				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	818	44
Great Britain and Ireland	1,009	33
United States of America	112	2
Australasia	11	
Belgium	2	
France	17	
Italy	237	
Germany	3	1
Austria and Hungary	47	
Norway, Sweden, Denmark, Finland, etc.	94	
Russia or other Slav country	126	
Other European country	30	
China	103	
Hindustan		
Japan	507	6
All other countries		
Nationality not stated		

TABLE No. 22.

SHIP-BUILDING.

Returns covering 40 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 188,353 02
Clerks, Stenographers, Salesmen, etc.	106,621 09
Wage-earners (including piece-workers)	1,540,461 06
Total	$ 1,835,435 17

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	1,120		July	1,023	
February	1,237		August	879	
March	1,495		September	1,056	
April	1,338		October	1,009	
May	1,456		November	1,120	
June	1,392		December	1,264	

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00		2			1
$ 6.00 to $ 6.99		1			1
7.00 to 7.99	1				1
8.00 to 8.99		2			3
9.00 to 9.99					4
10.00 to 10.99		2			1
11.00 to 11.99					4
12.00 to 12.99		1			
13.00 to 13.99	4	1			1
14.00 to 14.99	1	4			
15.00 to 15.99	3	1			1
16.00 to 16.99	9	1			3
17.00 to 17.99	2				
18.00 to 18.99	8				
19.00 to 19.99	85				
20.00 to 20.99	87				1
21.00 to 21.99	40				
22.00 to 22.99	310				
23.00 to 23.99	46				
24.00 to 24.99	179				1
25.00 to 25.99	49				
26.00 to 26.99	64				
27.00 to 27.99	60				
28.00 to 28.99	30				
29.00 to 29.99	67				
30.00 to 34.99	420				
35.00 to 39.99	332				
40.00 to 44.99	57				
45.00 to 49.99	10				
50.00 and over	17				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	753	
Great Britain and Ireland	886	
United States of America	72	
Australasia	4	
Belgium	10	
France	20	
Italy	16	
Germany	1	
Austria and Hungary	3	
Norway, Sweden, Denmark, Finland, etc.	145	
Russia or other Slav country	8	
Other European country	1	
China		
Hindustan		
Japan	48	
All other countries		
Nationality not stated		

TABLE No. 23.

SMELTING.

Returns covering 3 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 240,994 14
Clerks, Stenographers, Salesmen, etc.	353,737 11
Wage-earners (including piece-workers)	4,680,977 75
Total	$ 5,275,709 00

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	2,303	24	July	2,486	24
February	2,380	24	August	2,556	25
March	2,464	24	September	2,718	25
April	2,437	24	October	2,896	25
May	2,469	24	November	3,080	26
June	2,471	24	December	3,082	26

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					
$ 6.00 to $ 6.99					
7.00 to 7.99					
8.00 to 8.99					
9.00 to 9.99					
10.00 to 10.99	1				8
11.00 to 11.99					
12.00 to 12.99					
13.00 to 13.99					
14.00 to 14.99					
15.00 to 15.99					3
16.00 to 16.99					4
17.00 to 17.99	1				3
18.00 to 18.99	10				
19.00 to 19.99	8				
20.00 to 20.99	10		11		
21.00 to 21.99	4				5
22.00 to 22.99			3		3
23.00 to 23.99	5				
24.00 to 24.99	10				2
25.00 to 25.99	34		2		
26.00 to 26.99	59		2		
27.00 to 27.99			1		3
28.00 to 28.99	579				
29.00 to 29.99	642				4
30.00 to 34.99	695		5		
35.00 to 39.99	738				
40.00 to 44.99	175		2		
45.00 to 49.99	103				
50.00 and over	30				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	833	15
Great Britain and Ireland	1,324	8
United States of America	97	1
Australasia	10	2
Belgium	10	
France	4	
Italy	415	
Germany	10	
Austria and Hungary	58	
Norway, Sweden, Denmark, Finland, etc.	160	
Russia or other Slav country	139	
Other European country	44	
China	46	
Hindustan		
Japan		
All other countries	1	
Nationality not stated		

TABLE No. 24.

STREET RAILWAYS, GAS, WATER, POWER, TELEPHONES, ETC.

Returns covering 85 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 566,200 38
Clerks, Stenographers, Salesmen, etc	1,301,110 94
Wage-earners (including piece-workers)	7,020,602 02
Total	$8,887,913 34

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	3,406	1,355	July	4,097	1,532
February	3,483	1,379	August	3,999	1,517
March	3,648	1,405	September	4,079	1,482
April	3,922	1,446	October	4,041	1,446
May	3,880	1,461	November	3,865	1,438
June	4,142	1,504	December	3,752	1,478

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00		1	3		
$ 6.00 to $ 6.99		1			
7.00 to 7.99	1		1		
8.00 to 8.99			1		
9.00 to 9.99	1				
10.00 to 10.99	1	1			
11.00 to 11.99	1	9	10	6	16
12.00 to 12.99	1	1	200	10	210
13.00 to 13.99	3	2	67	1	67
14.00 to 14.99	10	2	2		1
15.00 to 15.99	9	3	408	14	3
16.00 to 16.99	5		200		
17.00 to 17.99	208		24		3
18.00 to 18.99	8		128		1
19.00 to 19.99	137		42		2
20.00 to 20.99	14		225		1
21.00 to 21.99	225		54		
22.00 to 22.99	180		72		4
23.00 to 23.99	147		2		4
24.00 to 24.99	462				1
25.00 to 25.99	52				
26.00 to 26.99	138		1		4
27.00 to 27.99	227				2
28.00 to 28.99	159				3
29.00 to 29.99	855		1		10
30.00 to 34.99	721		2		
35.00 to 39.99	461				12
40.00 to 44.99	267				
45.00 to 49.99	77				
50.00 and over	52				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	1,667	944
Great Britain and Ireland	2,587	620
United States of America	166	78
Australasia	19	6
Belgium	4	
France	19	3
Italy	106	
Germany	13	
Austria and Hungary	6	
Norway, Sweden, Denmark, Finland, etc.	142	6
Russia or other Slav country	33	
Other European country	14	
China	13	
Hindustan	4	1
Japan	4	2
All other countries	5	7
Nationality not stated	50	

TABLE No. 25.

WOOD—MANUFACTURE OF (N.E.S.).

Returns covering 82 Firms.

Salary and Wage Payments, 1926.

Officers, Superintendents, and Managers	$ 272,033 71
Clerks, Stenographers, Salesmen, etc	133,135 85
Wage-earners (including piece-workers)	1,732,191 85
Total	$2,137,361 41

Average Number of Wage-earners.

Month.	Males.	Females.	Month.	Males.	Females.
January	1,081	33	July	1,698	53
February	1,122	36	August	1,647	43
March	1,334	45	September	1,657	35
April	1,388	61	October	1,509	29
May	1,499	65	November	1,385	35
June	1,609	63	December	1,210	40

Classified Weekly Wage-rates (Wage-earners only).

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00					1
$ 6.00 to $ 6.99		3			1
7.00 to 7.99		4			1
8.00 to 8.99	1	34		1	3
9.00 to 9.99	2	28		1	
10.00 to 10.99	3	23		1	1
11.00 to 11.99	28	17			1
12.00 to 12.99	25	23	9	4	3
13.00 to 13.99	54	18	4		2
14.00 to 14.99	35	22	17	5	
15.00 to 15.99	71	7	10		1
16.00 to 16.99	67	6	2		
17.00 to 17.99	80	7	6	5	1
18.00 to 18.99	59	7	1		
19.00 to 19.99	155	6			
20.00 to 20.99	94		3		
21.00 to 21.99	79				
22.00 to 22.99	82				
23.00 to 23.99	27		1		
24.00 to 24.99	92				
25.00 to 25.99	46				
26.00 to 26.99	52				
27.00 to 27.99	23				
28.00 to 28.99	56				
29.00 to 29.99	15				
30.00 to 34.99	158				
35.00 to 39.99	96				
40.00 to 44.99	63				
45.00 to 49.99	18				
50.00 and over	84				

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	784	51
Great Britain and Ireland	552	8
United States of America	50	1
Australasia	2	
Belgium	4	
France	4	
Italy	23	
Germany	6	
Austria and Hungary	23	
Norway, Sweden, Denmark, Finland, etc.	68	5
Russia or other Slav country	18	
Other European country	3	
China	72	
Hindustan	2	
Japan	56	1
All other countries	2	
Nationality not stated	33	

SUMMARY OF ALL TABLES.

Returns covering 4,521 Firms.

Total Salary and Wage Payments during Twelve Months ended December 31st, 1926:—

Officers, Superintendents, and Managers	$ 12,399,863 91	
Clerks, Stenographers, Salesmen, etc.	10,627,258 93	
Wage-earners (including piece-workers)	106,393,476 71	
		$129,420,599 53
Returns received too late to be included in above Summary	$ 701,743 16	
Estimated pay-roll of employers in occupations covered by Department's inquiry, and from whom returns were not received	6,350,000 00	
Transcontinental Railways	13,701,493 76	
Dominion and Provincial Government Workers	6,000,000 00	
Wholesale and Retail Firms	4,000,000 00	
Delivery, Cartage and Teaming, Warehousing, Butchers, Moving-picture Operators, Coal and Wood Yards, and Auto Transportation	5,500,000 00	
Ocean Services and Express Companies	8,000,000 00	
Miscellaneous	1,500,000 00	
		45,753,236 92
		$175,173,836 47

Average Number of Wage-earners.

During the Month of	Males.	Females.
January	65,999	4,031
February	68,972	4,080
March	74,551	4,163
April	76,962	4,276
May	78,885	4,508
June	81,419	5,784
July	81,879	6,800
August	81,094	7,128
September	83,167	6,745
October	79,081	5,936
November	77,197	5,052
December	68,850	4,533

Nationality of Employees.

Country of Origin.	Males.	Females.
Canada and Newfoundland	36,155	4,295
Great Britain and Ireland	31,198	2,616
United States of America	4,015	286
Australasia	251	12
Belgium	248	8
France	495	33
Italy	2,586	130
Germany	373	53
Austria and Hungary	822	67
Norway, Sweden, Denmark, Finland, etc.	8,921	135
Russia or other Slav country	2,785	103
Other European country	586	12
China	7,932	24
Hindustan	748	2
Japan	3,912	237
All other countries	110	22
Nationality not stated	1,840	151

Classified Weekly Wage-rates (Wage-earners only.)

For Week of Employment of Greatest Number.	Males.		Females.		Apprentices.
	18 Yrs. & over.	Under 18 Yrs.	18 Yrs. & over.	Under 18 Yrs.	
Under $6.00	2	79	27	19	95
$ 6.00 to $ 6.99	3	100	22	27	72
7.00 to 7.99	12	88	165	38	77
8.00 to 8.99	53	129	144	64	108
9.00 to 9.99	54	152	76	70	47
10.00 to 10.99	97	168	59	79	105
11.00 to 11.99	204	116	88	69	76
12.00 to 12.99	359	269	544	113	314
13.00 to 13.99	528	124	1,006	167	95
14.00 to 14.99	965	133	1,074	63	27
15.00 to 15.99	1,438	113	1,075	37	60
16.00 to 16.99	1,311	121	744	6	29
17.00 to 17.99	1,952	77	337	13	23
18.00 to 18.99	2,520	83	465	8	21
19.00 to 19.99	7,755	54	246	3	10
20.00 to 20.99	3,052	30	471	3	18
21.00 to 21.99	5,427	33	288	7	15
22.00 to 22.99	4,697	9	192	3	19
23.00 to 23.99	4,475	19	59	.....	4
24.00 to 24.99	10,776	12	102	2	7
25.00 to 25.99	4,462	13	104	1	.....
26.00 to 26.99	2,820	.....	52	2	7
27.00 to 27.99	4,803	.....	42	.....	8
28.00 to 28.99	3,990	.....	15	.....	6
29.00 to 29.99	3,981	.....	18	.....	15
30.00 to 34.99	13,713	5	59	1	7
35.00 to 39.99	10,460	.....	22	.....	15
40.00 to 44.99	5,151	.....	8	.....	.....
45.00 to 49.99	2,797	.....	2	.....	.....
50.00 and over	2,446	.....	.....	.....	.....
Totals	100,303	1,927	7,506	795	1,281

THE "HOURS OF WORK ACT."

Members of the Board of Adjustment:
J. D. McNiven, Chairman.
T. F. Paterson. F. V. Foster.

The "Hours of Work Act" of 1923 went into effect on January 1st, 1925, and the period now under review was therefore the second year of its administration by the Board of Adjustment.

The Board have pleasure in recording that the Act has been, generally speaking, very loyally observed by those in control of industrial operations throughout the Province, and that it has been a distinct benefit to many thousands of workers whose hours of labour it has materially reduced. It was pointed out, at the time when the passing of this Act was contemplated, that occupations where workers were able to build up strong organizations of their own were not likely to be affected greatly by its provisions, as they had, for the most part, secured an eight hours' working-day by their own efforts. In some of our leading industries, however, the case was different, and long working-hours were extremely prevalent with large bodies of unorganized workers. It is to these latter in particular that the Act has been found applicable, and its administration during the past two years has had the effect of reducing their hours of labour in a very important degree.

Complaints and Investigations.

Complaints of non-observance of the Act have reached the Board from time to time, although, taking into account the diversified nature of our industries and the very wide area over which they are distributed, it may fairly be said that such complaints were far less frequent than might have been expected. Investigation into their causes has been made, either by members of the Board personally or by the staff of the Department of Labour, and where grounds of complaint were found to exist there has been little difficulty in having matters put right. The amount of friction or misunderstanding in the working of the Act has, in fact, been singularly small.

A rigid enforcement of an eight-hours' working-day, for all workers in all industries at all times, was clearly not contemplated by the Legislature, which expressly permitted a large amount of flexibility in bringing the principle of the legal limitation of working-hours into consonance with the changing needs of industry. The Act itself contained qualifying clauses with this object in view, and also empowered the Board of Adjustment to frame such exemptions to the operation of the Act, both permanent and temporary, as might be found necessary. The permanent exemptions have been provided for in printed regulations issued by the Board, and which will be found reproduced on another page of this report. They have a more or less general application in the industries to which they relate. The temporary exemptions are those allowed by the Board from time to time, to meet the requirements of individual employers in periods of unusual stress or emergency.

Reasons for granting Exemptions.

During the year 1926 there have been 176 of these temporary exemptions granted. The majority of them have been in the interest of those engaged in one branch or another of the lumbering industry. Perhaps the commonest ground of application for permission to work overtime has been in the case of lumber-manufacturers who had to meet urgent orders. Among those situated at or near the Coast a frequent experience has been the arrival of a ship for lumber a few days before it was expected, and the firm has been allowed to work overtime in order that the cargo might be shipped with as little delay as possible. Exemptions have also been granted to lumber firms to make up time lost owing to a breakdown, or to permit of a holiday being taken on another day. Overtime during one week was allowed to an employer "on account of important delayed orders and bad condition of roads," and rehauling or replacing of machinery was allowed to be done in one or two cases during extra hours. Unloading crews were allowed to work overtime on account of congestion of cars and scow; an extra hour daily was allowed to make up delayed orders due to burnt-out motor; and a similar concession given to meet additional requirements for railway needs prior to grain movements. A ten-hour day was allowed to an Interior firm during the fall, "on account of number of logs that must be cut before the river is frozen up"; and the gang working a resaw was allowed overtime during one week because of "inability to run gang-saw on account of large turbine being burnt."

Other exemptions were given to firms in the garment-making, contracting, and miscellaneous industries, chiefly owing to the pressure of urgent orders. A firm supplying containers for the fruit-crop was allowed overtime on account of the early berry season, and a firm carrying on a highly specialized industrial process was allowed overtime for two engineers until such time as their period of employment exceeded 50 per cent. of the time the plant was operated. A sugar-refinery asked for a fifty-four-hour week in certain departments during the busy four months of late summer and fall, and the application was granted. For the makers of some specialities permits were given to cover the few weeks before Christmas. A construction firm was given facilities for two shifts to complete contracts before heavy rains, and on another contract a firm was allowed to work two shifts on a nine-hour basis "provided all men that can be employed are placed on each shift."

Where the grounds upon which applications for exemption were made appeared to be unreasonable or insufficient, such applications have not been acceded to. During the past year forty-two applications were refused by the Board.

Shortening the Working-day.

That the Act has resulted in a considerable shortening of the working-day for those who formerly used to be employed for an excessive number of hours appears to admit of no doubt. Abundant proof of this is to be found in the details as to working-hours which were collected by the Department from 4,521 employers of labour in the past year. In former years these figures were dealt with in the statistical section of the report, but this year it was considered that they might be more appropriately referred to in this section dealing with hours of work. The table which follows speaks for itself. In each industry the comparison is made between 1924, the year before the Act became operative, and last year. In nineteen of the twenty-five groups there is a lowering of the average weekly working period, and those groups not so affected either contain a considerable number of workers who do not come under the provisions of the Act, or else their normal working-hours, both before and since the passing of the Act, have been fewer than forty-eight a week.

Effect in the Lumbering Industry.

It is in the lumbering group of industries, employing altogether something like 40,000 persons, that the effect of the "Hours of Work Act" has chiefly been felt. In the logging branch the average hours have been reduced from 50.79 to 48.71, or a difference of 2.08 a week. Sawmills have witnessed an average reduction of working-time by 4.82 hours a week; shingle-mills, 7.12 hours; planing-mills, 5.10 hours; logging-railways, 1.95 hours; the branch embracing box-factories, sash and door plants, etc., 2.62 hours; mixed plants, 4.98 hours; and pulp and paper mills, 5.01 hours. In the lumbering group there are still some sections with an average slightly over forty-eight hours, and this is explained by the permanent and temporary exemptions already referred to, but the figures given in the table below will show that, for the general body of workers, the Act has meant a real reduction in the hours of labour.

Apart from the lumbering industry there is an average reduction of 2.15 hours weekly in the contracting group, and of 4.41 hours in the allied group of industries for the provision of builders' materials. The other changes are less important, though, in reference to the increase of 3.49 hours weekly in the oil-refining group, it should be noted that this group includes the new fish-reduction plants, where the operations are in the nature of things both seasonal and intermittent, and in which it would not be possible to insist upon a strict interpretation of the Act.

Changes in Hours of Work.

The following table shows the effect of the "Hours of Work Act" on the average weekly working-hours. The Act became effective January 1st, 1925.

		Average Weekly Working-hours.	
		1924.	1926.
No. 1. *Breweries.*—Under this heading are tabulated mineral-water manufacturers and breweries	Covered by the Act. In certain continuous processes seven eight-hour shifts a week are allowed	49.04	47.91
No. 2. *Builders' Material, etc.*—Includes manufacturers of brick, cut stone, Portland cement, lime, tiles, and firebrick; also stone-quarries and dealers in sand, gravel, and crushed rock	Covered by the Act	51.51	47.10
No. 3.—*Cigar and Tobacco Manufacturing.*—Comprises only these trades	Covered by the Act	44.26	44.46
No. 4. *Coal-mining.*—This group contains also the operation of coke-ovens and coal-shipping docks	This group comes under the "Coal-mines Regulation Act"	47.90	48.00
No. 5. *Coast Shipping.*—Includes the operation of passenger and freight steamships, stevedoring, tug-boats (both general and towing logs), and river navigation, but does not include the operation of vessels in the offshore trade	This group is not covered by the Act	56.76	53.29
No. 6. *Contracting.*—Here are grouped building trades, painting and paper-hanging, plumbing and heating, and sheet-metal works; also contractors for industrial plants, structural-steel fabricating, railway-fencing, sewers, pipes and valves, dredging, pile-driving, wharves, bridges, roofing, and automatic sprinklers. Firms making returns as building contractors, constructors of dry-kilns, refuse-burners, mills, brick-furnaces, electrical contractors, hardwood and sanitary floor-layers, and bricklayers	This group is covered by the Act	47.72	45.57
No. 7. *Explosives, Chemicals, etc.*—Includes the manufacture of these commodities, also the manufacture of fertilizers	Covered by the Act. In certain continuous processes seven eight-hour shifts a week are allowed. The manufacture of fertilizers from fish is dealt with in Regulation 11	52.44	51.49
No. 8. *Food Products, Manufacture of.*—This group includes bakeries, biscuit-manufacturers, cereal-milling, creameries and dairies, fish, fruit and vegetable canneries, packing-houses, curers of ham and bacon, blending of teas; also manufacturers of candy, macaroni, syrup, jams, pickles, sauces, coffee, catsup, and spices	All branches of the agricultural, horticultural, or dairying industries are exempt from the provisions of the Act. (*See also* Regulations 10, 11)	53.67	51.82
No. 9. *Garment-making.*—Includes tailoring, the manufacture of buttons, pleating, embroidery, etc., jute and cotton goods, shirts, overalls, knitted goods, millinery and ladies' outfitting	This group is covered by the Act	45.12	44.81
No. 10.—*House Furnishings.*—Comprises firms engaged in the manufacture of furniture, beds and bedding, springs and mattresses, upholstering, and carpet and linoleum laying	This group is covered by the Act. (*See* Regulation 13)	46.01	45.14
No. 11. *Jewellery, Manufacture of.*—Includes the repair as well as manufacturing of jewellery and watches and optical instruments (where same is carried on in a factory)	Covered by the Act	43.65	43.96
No. 12. *Laundries, Cleaning and Dyeing.*—Includes these industries only	Covered by the Act	46.66	46.54
No. 13. *Leather and Fur Goods, Manufacture of.*—Comprises manufacturers of boots, shoes, gloves, harness, trunks, and leather Indian novelties; also furriers and hide and wool dealers	Covered by the Act	47.88	47.26

CHANGES IN HOURS OF WORK—*Continued.*

		Average Weekly Working-hours.	
		1924.	1926.
No. 14. *Lumber Industries.*—In this group are included:—	Covered by the Act. (*See* Regulations 1, 3, 4, 5, 6, 7, 8)		
Logging		50.79	48.71
Logging-railways		52.01	48.06
Mixed plants		54.01	49.03
Lumber-dealers		52.29	46.78
Planing-mills		55.58	50.48
Sawmills		54.05	49.23
Shingle-mills		55.44	48.32
No. 15. *Metal Trades.*—This group includes marine blacksmithing, oxy-acetylene welding, boiler-making, iron and brass foundries, garages, vulcanizing, machine and pattern shops, galvanizing and electroplating; also manufacturers of handsaws, nuts and bolts, pumps, marine engines, mill machinery, and repairs to same	Covered by the Act. (*See* Regulation 9)	44.36	45.81
No. 16. *Metal-mining.*—Includes all metalliferous mining	This industry comes under the "Metalliferous Mines Act" and is principally a seven-day operation	53.12	55.43
No. 17. *Miscellaneous Trades and Industries.*—Here are grouped returns from trades which are not numerous enough to warrant special categories. They include manufacturers of soap, sails, tents, awning, brooms, paper boxes, and tin containers; also cold storage	Covered by the Act	48.79	47.67
No. 18. *Oil-refining.*—Includes also the manufacture of fish-oil	Covered by the Act. In certain continuous processes seven eight-hour shifts a week are allowed. (*See* Regulation 11)	47.97	51.46
No. 19. *Paint-manufacturing.*—Includes also white-lead corroders and varnish-manufacturers	Covered by the Act	44.63	44.25
No. 20. *Printing and Publishing.*—This table includes the printing and publishing of newspapers, job-printing, paper-ruling, bookbinding, engraving and embossing, blue-printing, lithographing, draughting and map-publishing, and the manufacture of rubber and metal stamps	Covered by the Act	45.90	45.58
No. 21. *Pulp and Paper Manufacturing.*—Comprises only firms engaged in that industry	Covered by the Act. In certain continuous processes seven eight-hour shifts a week are allowed	53.24	48.23
No. 22. *Ship-building.*—Comprises both wooden- and steel-ship building and repairing, also construction and repair of small craft, and salvage	Covered by the Act. (*See* Regulation 9)	44.73	44.14
No. 23. *Smelting.*—Comprises firms engaged exclusively in that industry	Covered by the "Labour Regulations Act"	55.95	53.21
No. 24. *Street-railways, Gas, Water, Power, etc.*—This group comprises generating and distribution of light and power, manufacture of gas, dissolved acetylene and oxygen; also includes gasolene lighting and heating devices, and supply of water to municipalities	Covered by the Act. In certain continuous processes seven eight-hour shifts a week are allowed	46.12	45.83
No. 25. *Wood, Manufacture of (not elsewhere specified).*—Here are grouped manufacturers of sash and doors, interior finish, water-proof ply-wood, veneer, store and office fittings, barrels, boxes, ships' knees, ready-cut buildings, wooden pipes and tanks, wooden pulleys, wooden toys, caskets, coffins, and undertakers' supplies	Covered by the Act. (*See* Regulation 15)	48.90	46.28

REGULATIONS, "HOURS OF WORK ACT, 1923."

Having regard to the nature and conditions of the industrial undertakings hereinafter mentioned, the condition of employment and welfare of employees, the Board of Adjustment, after inquiry held pursuant to the "Hours of Work Act, 1923," and subject to the approval of the Lieutenant-Governor in Council, hereby exempts to the extent hereinafter stated from the provisions of the said Act the industrial undertakings and workers engaged therein, hereinafter mentioned, namely:—

1. All persons employed in sawmills, planing-mills, and shingle-mills situate in that part of the Province lying east of the Cascade Mountains shall be permitted to work one hour per day in excess of the limit prescribed by section 3 of the Act; but the total hours worked in any week shall not exceed fifty-four.

2. In the industrial undertakings referred to in the preceding regulation the limit of hours of work thereby fixed may be exceeded by one hour per day on five days of each week for the purpose of making a shorter work-day on one day of the week; but the total hours worked in any week shall not exceed fifty-four.

3. In sawmills, planing-mills, and shingle-mills situate in that part of the Province lying east of the Cascade Mountains, and which are operated with a single shift of engineers, firemen, and oilers, the engineers, firemen, and oilers shall be permitted to work overtime to the extent of one and one-half hours per day to cover preparatory and complementary work in addition to the said fifty-four hours per week set forth in Regulation 1.

4. All persons employed in the lumber and shingle-manufacturing industries in booming operations, or in handling and transporting lumber for planing to fill urgent orders, or for shipping to fill urgent orders, shall be permitted to work such hours in excess of the limit of hours of work prescribed in section 3 of the Act as may from time to time be necessary.

5. All persons employed on night shifts in sawmills, planing-mills, and shingle-mills situate in that part of the Province lying west of the Cascade Mountains shall be permitted to work a total of forty-eight hours each week in five nights, in lieu of forty-eight hours each week in six nights; but no night shift shall exceed ten hours: Provided that this regulation shall not apply in respect of industrial establishments carried on by any employer unless the actual working-hours of each person working for that employer, either by the day or by the piece, or otherwise, are limited to forty-eight hours in the week.

6. All persons employed in the logging industry in booming operations, or in transporting logs on a logging-railway, by motor-trucks, horses, flumes, or river-driving, or in transporting workmen or supplies for purposes of the industry, or in the operation and upkeep of donkey-engines, shall be exempt from the provisions of section 3 of the Act.

7. In all industrial undertakings which use steam as a motive power and which are operated with a single shift of engineers, firemen, and oilers, the engineers, firemen, and oilers shall be permitted to work overtime to the extent of one and one-half hours per day to cover preparatory or complementary work in addition to the maximum hours of work prescribed by section 3 of the Act.

8. All persons employed as members of the shipping staff in industrial undertakings where shipping operations are of an intermittent nature shall be permitted to work during such hours in excess of the limit of hours of work prescribed in section 3 of the Act as may be necessary from time to time to enable urgent shipping orders to be promptly executed.

9. All persons employed in shipyards, engineering-works, machine-shops, foundries, welding plants, sheet-metal works, belt-works, saw-works, and all plants of a similar nature, when engaged on emergency repair-work only, are exempt from the provisions of section 3 of the Act.
(Section 9 amended as above, June 23rd, 1927.)

10. All bakers employed in the baking industry shall be permitted to work ten hours per month in excess of forty-eight hours per week, and all bakery salesmen or deliverymen twenty-six hours per month in excess of forty-eight hours per week.

11. The fishing industry and all its attendant branches, including the canning or otherwise preserving of fish and the manufacture of by-products of fish, shall be exempt from the provisions of the Act.

12. All persons employed in cook and bunk houses in connection with any industrial undertaking shall be exempt from the provisions of the Act.

13. All persons employed in the manufacture of furniture, beds and mattresses, as operators of picking and garneting machines, shall be permitted to work four hours per week in excess of the limit of hours of work prescribed by section 3 of the Act during the following months: February, March, April, May, September, October.

14. Two machine-tenders and two back-tenders in the employ of the Sidney Roofing and Paper Company, Ltd., are exempt from the provisions of section 3 of this Act while engaged in the manufacture of paper, but only while so engaged.

15. All persons employed in the manufacture of wooden boxes or containers for shipment or distribution of fish, fruit, or vegetables shall be permitted to work such hours in excess of the limit prescribed by section 3 of the Act, for the months of June, July, August, September, and October, as may from time to time be necessary to fill urgent orders.

16. The employer in every industrial undertaking in which additional hours are worked by any person employed therein in pursuance of section 6 of the Act, or in pursuance of any of these regulations which permits a limited extension of working-hours in excess of the limit of hours of work prescribed by section 3 of the Act, shall keep a record thereof in the following form, and shall on the first day of each month file with the Board of Adjustment a duplicate of the record for the last preceding month:—

Return showing Overtime worked under Authority of Section 6 and Section 9 of the "Hours of Work Act, 1923."

Date.	Name of Employee.	Occupation.	No. of Hours Overtime.	Reasons for such Overtime.

This is to certify that the information supplied on this form is correct and includes the names of all employees who have worked overtime during the month of....., 19.....

.....
(Name of employer.)

.....
(Nature of industry.)

.....
(Location of plant.)

17. Every employer shall notify, by means of the posting of notices in conspicuous places in the works or other suitable place, where the same may readily be seen by all persons employed by him, the hours at which work begins and ends, and, where work is carried on by shifts, the hours at which each shift begins and ends, also such rest intervals accorded during the period of work as are not reckoned as part of the working-hours. These hours shall be so fixed that the duration of the work shall not exceed the limits prescribed by the "Hours of Work Act, 1923," or by the regulations made thereunder, and when so notified they shall not be changed except upon twenty-four hours' notice of such change posted as hereinbefore specified; and in all cases of partial or temporary exemption granted by the Board of Adjustment under section 10 of the Act a like notice of the change in working-hours shall be posted, which notice shall also state the grounds on which the exemption was granted.

19. In the manufacture of carbonated beverages all persons employed in the capacity of delivery salesmen shall be permitted to work during the months of May, June, July, August, and until September such hours in excess of the hours prescribed in section 3 of the Act as may be necessary to meet exigencies of the trade.

20. All persons employed in the lithographing industry shall be permitted to work during the months of May, June, July, August, September, and October such hours in excess of the limit of hours prescribed in section 3 of the Act as may from time to time be necessary to fill urgent orders. This exemption is to be used only when sufficient competent help is not available.

21. All persons employed in the sawmills of the Pacific Mills, Limited, operating in connection with the pulp and paper plant at Ocean Falls, shall be permitted to work twenty (20) hours per month in excess of the hours prescribed in section 3 of the Act.

22. In any week in the year on which a public holiday (other than Sunday) occurs all persons employed in laundries, cleaning and dyeing establishments, shall be permitted to work on the remaining working-days of the week such hours in excess of the limit of hours of work prescribed in section 3 of the Act as may be necessary to avoid serious interference with the business of the industry, but the total hours worked in any such week shall not exceed forty-eight.

18. *Where additional hours of work are allowed by any of these regulations to cover certain classes of workers or special conditions set out in the regulations, such additional hours shall apply only in respect of the classes of workers and the special conditions so set out, and shall in no sense be regarded as part of the normal working-day.*

THE "MALE MINIMUM WAGE ACT."

Members of the Board of Adjustment:
J. D. McNiven, Chairman.
T. F. Paterson. F. V. Foster.

This Act was passed by the Legislature in December, 1925, and is the first and, so far, the only law of general application providing for a minimum wage for male workers that has been passed by any legislative body in Canada, or, indeed, in North America.

The character of the measure is by this time fairly well known, but it may not be out of place to indicate its main provisions very briefly. The administration of the Act is in the hands of the Board of Adjustment, whose duty it is to ascertain the wages paid to employees in the various occupations and fix a minimum wage. This is to be made legally effective by the issue of an order or orders by the Board, and after the date specified in the order it becomes illegal for an employer to pay an employee a wage less than the minimum. Exceptions may be made in the case of employees classified as handicapped, or part-time employees, or apprentices, but for each such individual a permit is to be given by the Board, authorizing the payment of a wage less than the ordinary minimum wage; and the number of employees to whom such lesser wage is paid may be limited. Penalties of fine or imprisonment are provided in case of violation of the Act, and an important clause is the one which enables an employee, having been paid less than the legal minimum wage to which he is entitled, to recover from his employer, in a civil action, the amount by which he has been underpaid, with costs.

Dealing with the Lumbering Industry.

In view of the magnitude of the powers which had been placed in their hands, the Board decided that it would be better to proceed by stages, rather than attempt to deal at once with the wages question as touching all industries in the Province. Their first survey of the position convinced them that the industry containing the largest number of persons liable to be affected by the provisions of the Act was that of lumbering. In this industry, taking into account all its branches, there are in round figures about 40,000 persons employed in the Province.

As soon as the Board made it known that they were considering the fixing of a minimum wage for the lumbering industry, they began to receive representations, both from employers and employed, making proposals as to the amount which should be decided upon. Some of the employers who were paying to their unskilled workers as little in some cases as 22½ cents or 25 cents an hour urged upon the Board that conditions in the industry would not afford a higher rate of pay. Lumber-workers, on the other hand, urged that the minimum wage should be fixed so as to correspond with the cost of living, which, it was represented, could not be met on a wage of less than 50 cents an hour. This contention was brought forward very emphatically at a public meeting at Vancouver, at which the members of the Board met the lumber-workers of that city and neighbourhood in April. In view of the close resemblance between conditions in the lumbering industry here and in the States of Washington and Oregon, the Board paid a visit to those two States early in the year, and obtained a large amount of information as to the rates of wages being paid. The result convinced them that, while in some of the more highly-skilled occupations the wages paid on the American side were lower than in British Columbia, the lowest rates of pay received by lumber-workers in this Province were somewhat less than the pay for similar work in adjacent American States.

Minimum Wage of 40 Cents an Hour.

With all these facts and arguments before them, the Board eventually came to the decision that the minimum wage in the lumbering industry might fairly be set at 40 cents an hour.

In order to give the lumber interests time to allow for the change in any new business arrangements in which they might be entering, and also gradually to bring about any necessary readjustments in their working force, the Board agreed to postpone until October 1st the promulgation of the Order, thereby allowing for the one month's notice provided by the Act, bringing the Order into force on November 1st.

The Order was published in the British Columbia Gazette on September 30th, 1926, and was in the following terms:—

"MALE MINIMUM WAGE ACT."

Order establishing a Minimum Wage in the Lumbering Industry.

Pursuant to the provisions of the "Male Minimum Wage Act," the Board of Adjustment, constituted under the "Hours of Work Act, 1923," having made due inquiry, hereby orders:—

1. That where used in this Order the expression "lumbering industry" includes all operations in or incidental to the carrying-on of logging camps, shingle-mills, sawmills, planing-mills, lath-mills, sash and door factories, box-factories, barrel-factories, veneer-factories, and pulp and paper mills, and all operations in or incidental to the driving, rafting, and booming of logs.

2. That, subject to the other provisions of this Order, the minimum wage for all employees in the lumbering industry shall be the sum of forty cents per hour.

3. That the number of handicapped, part-time, and apprentice employees in respect of whom a permit may be obtained pursuant to the said "Male Minimum Wage Act" authorizing the payment of a wage less than the minimum wage otherwise payable under this Order shall, in the case of each employer, be limited to ten per centum of his employees.

Dated at Victoria, B.C., this twenty-ninth day of September, 1926.

J. D. McNiven, *Chairman*,
T. F. Paterson,
F. V. Foster,
Members of the Board of Adjustment.

Increased Pay for 9,000 Workers.

According to the figures available to the Board at the time the Order was made, there were nearly 24 per cent. of the lumber-workers in all branches of the industry in the Province who were being paid less than 40 cents an hour, and it was estimated that the Order would mean an increase of pay for nearly 9,000 workers. This estimate was borne out in the figures laid before the Board by a large number of employers who favoured the minimum being placed at a lower figure, and who set forth that a 40-cent minimum would mean a substantial addition to the cost of operating their mills. As against this was the possibility that a higher wage would attract a better class of labour. It had come to the notice of the Board that there was a large body of white labour employed in the industry at low wages, and that these men, having no higher rates of pay in prospect, had not regarded this work as their permanent calling. This had meant the absence of an incentive to attain a higher degree of efficiency, and also frequent changes of personnel, both of which conditions had been a liability rather than an asset to the industry. The fixing of a legal minimum wage, it was considered, would make for an improvement in these matters.

Orientals in Mills and Camps.

Undoubtedly the position in the lumbering industry was complicated by the fact that a large number of Orientals were employed, mainly, though not entirely, in the lower-paid occupations. For several years past the numbers of these Oriental workers, if not declining, had failed to increase in proportion to the growth of the industry, but they were still sufficiently numerous to affect the general rates of pay. The Board found it necessary to go very thoroughly into this aspect of the question.

Of the men employed in the lumbering industry in 1925, 20.46 per cent. were Asiatics, but the percentage varied considerably in the various branches of the industry. In the logging camps there were only 7.53 per cent.; on logging-railways, 14.22 per cent.; in planing-mills, 36.85 per cent.; in sawmills, 33.73 per cent.; in shingle-mills, 46.85 per cent.; and in box-factories and sash and door mills, 11 per cent. Sawmills employed the largest number, and here again the percentage varied very considerably in different mills. The result of investigations made it appear that a comparatively small number of large firms, situated in or within easy distance of the bigger centres of population, had come to rely upon the Oriental to a much larger extent than was common to the industry as a whole. It is not without significance that some of the loudest complaints against the establishment of a minimum wage were received from these quarters.

Alternative Proposal made by Manufacturers.

A proposal was made by the representatives of large lumbering interests that the minimum wage should be fixed at a lower figure, or that the Order should apply only to a given percentage of the employees, corresponding broadly to the number of white workers in the industry; the lumbermen, on their part, to agree to the gradual reduction, and eventually the total elimination, of the Oriental worker. The latter part of the proposal was not worked out in detail, as the Board took the position that, apart from any consideration of its feasibility, the terms of the Act precluded them from dealing with the question in this way. The attitude taken by the

Board is that, under the present law, any orders made must apply impartially to all workers, irrespective of nationality. At the time of the Order coming into effect, probably more than half of the lumber-workers receiving less than 40 cents an hour were Orientals. Careful inquiry showed that, while there had been no restriction upon an employer as to the nationality of his workers or the rates of pay they were to receive, the white worker did, in fact, command about a 25-per-cent. higher rate of pay than the Oriental worker following the same occupation. There was common testimony that the greater efficiency of the white worker entitled him to this higher pay; it seemed reasonable to expect that, if an employer found himself obliged to pay his Oriental workers 40 cents an hour, he would be willing to pay his white workers more, or, alternatively, that a large additional number of white workers would be introduced into the industry.

The Case of Handicapped Workers.

As to the handicapped man, the part-time employee, and the apprentice, who were permitted to be paid at a rate lower than the legal minimum, the Board laid it down that no man should be placed upon the handicapped list except at his own request. In their Order the Board limited the number of employees permitted to be paid by any employer a sum less than the minimum wage to 10 per cent. and the permits issued up to the present have in no case approached that number.

The Order went into force on November 1st, and was therefore operative only two months of the period covered by this report. The months of November and December are normally a very quiet period in the lumbering industry, and 1926 provided no exception to the rule; but it does not seem reasonable to attribute any slackness in the industry to the minimum wage, as the lumber-mills of Washington and Oregon, where there is no legal minimum wage, and which are governed by very similar business conditions, were feeling the effects of trade depression as much as our own.

Inspection of Mills on the Coast.

In the last two weeks of the year an inspection was made by officials of the Department of Labour of thirty-one of the principal sawmills in the Coast area, and in each case an examination of books was made. From the data thus obtained the following report was made:—

Summary of Number of Employees in Thirty-one Sawmills, covering the Pay-roll Period of November, 1926, and a Comparison with the Figures submitted by the same Firms in 1925.

1925.		1926.	
Total employees	6,489	Total employees	7,111
Whites	3,582	Whites	4,672
Orientals	2,907	Orientals	2,439

This shows an increase in the total number of employees of	622
Decrease in Oriental employees	468
Increase in white employees	1,090

Increase of total employees = 9½ per cent.

In 1925 there were 55.20 per cent. of white employees and 44.80 per cent. of Orientals.

In November, 1926, there were 65.70 per cent. of white employees and 34.30 per cent. of Orientals.

These figures seem a sufficient commentary upon any apprehension that the chief result of the Order would be to benefit the Oriental worker.

Validity of the Order challenged.

The validity of the Board's Order was early challenged by the employers, and on November 7th a test case was brought before the Magistrate in Vancouver, a summons being taken out by the Board of Adjustment against a lumber firm in that city for failure to post the order of the Board. Counsel for the defendant argued that an order which included one industry and failed to include other industries was invalid, but the Magistrate overruled this contention and imposed the minimum fine of $10.

The defendants lodged an appeal, which was heard by Chief Justice Hunter three days later. Defendant's counsel again used the same argument as in the Court below, submitting that the

intention and meaning of the Act provided for full inquiry being conducted by the Board into every line of industry before fixing a minimum wage affecting any industry. The order affecting the lumber industry was simply an interim order, which the Board did not possess the right to enact. The Board had no right to discriminate against one line of industry.

The Chief Justice disagreed with this contention, and held that the intention of the Act was that the Board should hold inquiries and make orders from time to time. Otherwise, if defendant's contentions were upheld, the Act would be unworkable. He dismissed the appeal.

The Case in Court of Appeal.

The defendants took the case a further step, and a decision was given a few weeks later by the British Columbia Court of Appeal. Chief Justice Macdonald upheld the ruling of Mr. Justice Hunter, and in doing so was supported by Mr. Justice McPhillips, Mr. Justice Martin, and Mr. Justice M. A. Macdonald. Mr. Justice Galliher dissented. The effect of this ruling was to affirm the conviction recorded against the defendant firm. No further appeal was taken.

Reasons for dismissing the Appeal.

Chief Justice Macdonald, in giving judgment, said:—

"The prosecution is founded on the provisions of the 'Male Minimum Wage Act,' chapter 32 of the Acts of 1925, which enacts that every employer shall post up in his establishment a copy of the order of the Board fixing a minimum wage for his employees. It was for a breach of the Act, not for a breach of the order of the Board, that the appellants were convicted.

"Their answer to the charge, and the only one open to them, is that the order was made without authority of the Act, and is therefore null and void. They submit that no obligation was imposed upon them by the Act to post up a piece of paper which in contemplation of law had no existence. The question for decision, therefore, is not whether the Board made the right order or the wrong order, but whether they had power to make the order, whether it were right or wrong. Mr. Farris, appellant's counsel, made two submissions in support of his contention, that the Board had no power to make any order in the terms of the one in question. He argued that they were authorized to fix a minimum wage for those engaged in 'occupations,' not a minimum wage for those engaged in 'industries,' and that the order is of the latter description. Secondly, he argued that the Board were authorized to fix a minimum wage only for all those engaged in an 'occupation' throughout the Province, not for some of them merely.

"I shall deal first with the latter contention, since, in my opinion, the answer to it will determine the appeal.

"The question, it will be borne in mind, is not whether the order is right or wrong, but whether it is or is not null and void. It is conceded that the Board has power to fix a minimum wage for those in occupations to which the Act applies. It is also conceded that the Board is authorized to make an order that all those employees, for instance, engineers, blacksmith, etc., throughout the Province shall receive not less than a stated wage. But it is denied that this may be done, as it were, piecemeal. It must be applied to all engineers, etc., irrespective of the particular industry to which they may be attached for the time being. That is the appellants' contention. That contention, in my opinion, goes only to the legality of the order, not to the powers of the Board to make it. The Board has power to make a general order. We will assume that they mistakenly made a limited one; that order may be wrong but not a nullity. The latter is the only question we are concerned with. The Act itself, I think, contemplates successive orders and admits of the fixing of minimum wages for all employees engaged in occupations connected with particular industries. It would be difficult otherwise to give effect to the peculiar circumstance of separate employers contemplated by the Act.

"I now come to the first submission mentioned above, that the Board by the order complained of, without authority fixed a minimum wage to be paid to employees in an 'industry,' not of an 'occupation.' Agreeing with Mr. Farris, as I do, that the wage must have reference to the occupation, not to the industry, it becomes necessary to examine into its substance, which is the fixing of a minimum wage for all employees, whatever their several occupations may be, that is to say, trades or callings, connected with the lumbering industry, at 40 cents an hour. True, it does not specify those occupations by name, but it includes them all in the 40-cent rate. Now, whether or not that is a fair way of dealing with them, having regard to the different standards of wages, is not the question. The question is one of *ultra vires* or *intra vires*, not merely right or wrong.

"I am satisfied that the Board had power to make the order in question, so that the conviction ought to be affirmed.

"Whether or not they exercised their powers properly in the premises, I find it unnecessary to say. I do not wish to go beyond what is strictly necessary for the decision of this appeal. I would dismiss the appeal."

A Dissentient Judgment.

Mr. Justice Galliher's judgment was as follows:—

"I am of the view that the word 'occupation' in the second line of clause 3 of the 'Minimum Wage Act,' S.B.C. 1925, chapter 32, has reference to occupations of employees and not to industries in which the employer may be engaged. Section 13 of the Act would seem to strengthen that view.

"Assuming this to be right, the Board are directed to fix a minimum wage for such employees in the manner provided in the Act.

"The Board are further directed to make such inquiries as it deems necessary for the purposes of the Act by section 4, and section 5 enacts: (1) After inquiry the Board may by order establish a minimum wage for employees and may establish a different minimum wage for different conditions and times of employment.

"Then there are other directions which do not affect the point raised here.

"The Board proceeded under the Act, made certain inquiries, and fixed a minimum wage for those employed in lumber industries only, and objection is taken that they are in error in dealing with the Act piecemeal.

"The point is, should the Board first proceed to make all inquiries relating to the employment of those engaged in different classes or occupations, fix a minimum wage for each class, and then, or at the same time, if different conditions and times of employment require it in certain cases, fix a different minimum wage in those cases, or can they proceed as they did here, and fix a minimum wage for one industry before fixing any general minimum wage?

"My view of the 'Minimum Wage Act' is that the Board should first fix a minimum wage for a class of occupations, say a carpenter, a blacksmith, or a stationary engineer, so that not less than a stipulated wage may be paid to him in the carrying-on of his occupation generally, no matter how favourable the conditions are, thus establishing a basis which shall be the minimum in that occupation; then, having established that basis, the Board may, where the employee is engaged in his occupation, where the conditions are hazardous to life or health (to instance mining) or for other good reasons within the Act, grade up (if I may use the expression) the minimum wage to the employee under such conditions.

"Once you have established your minimum wage for an occupation you cannot grade down; if conditions call for it, it may be graded up, and to grade up you must have a basis or foundation to start from.

"I do not say it is not open to other construction, but the best consideration I can give it leads me to the above conclusion. I would allow the appeal."

Cooks' Wages in Lumber Camps.

During the period when this report was in preparation for the press a case was heard at Prince George by County Court Judge Robertson, in which two men employed as cooks by a lumber company claimed that they were entitled to be paid the minimum wage. The Judge held that they were not so entitled, as employment of this nature was not included in the order made by the Board. The legal argument in the case turned upon the question of whether the occupation of a cook was "incidental to" the lumbering industry.

The plaintiffs laid the circumstances before the Board of Adjustment, stating that, while they were dissatisfied with the ruling of the County Court Judge and desired to enter an appeal, they were not financially in a position to do so. Judging that it was desirable to have an authoritative decision on the matter, the Board instructed counsel to argue the case on behalf of the plaintiffs in the Court of Appeal. This Court, consisting of Chief Justice Macdonald, Mr. Justice McPhillips, Mr. Justice Galliher, and Mr. Justice M. A. Macdonald, unanimously reversed the decision of the County Court Judge, and held that the plaintiffs were entitled to be paid the legal minimum wage as laid down in the order affecting the lumbering industry.

Other Industries and the Act.

In the last few months the Board have been conducting investigations into conditions in other industries, with a view to issuing orders extending the operation of the Act.

LABOUR DISPUTES IN 1926.

The absence of labour disputes of a serious character was again a welcome feature in the industrial life of the Province during 1926. The more amicable conditions established in 1925 were continued in the past year, and for 1926 there were recorded thirteen disputes involving a stoppage of work. These affected 1,749 workmen and entailed a loss of 28,016 working-days. This compares with 15 disputes, affecting 3,572 workmen, and a loss of 23,300 working-days in 1925, whereas in 1924 no less than 223,876 working-days were lost in nine disputes.

An Injunction and Damages.

Owing to the discharge of two employees, which they held to be contrary to an unexpired annual agreement, seven stage-hands at a Vancouver theatre struck work on January 9th. The manager claimed to have replaced the strikers by other workers, but the union declared the strike still in existence. Early in March an injunction was granted restraining the strikers from interfering with and damaging the business of the theatre by distributing literature to the effect that the theatre was unfair to organized labour. In the following month the manager of the theatre asked to have the injunction made permanent, and also for $700 a week damages for injury to his business. The Court granted the permanent injunction and awarded $1,750 damages against the union. At the end of May the theatre closed down indefinitely, but the members of the stage-hands' union appealed against the Judge's decision.

Important Legal Decision.

The case, that of "Schuberg *versus* Local No. 118, International Alliance Theatrical Stage Employees *et al.*," was afterwards heard by the British Columbia Court of Appeal, consisting of the Chief Justice, Mr. Justice McPhillips, Mr. Justice M. A. Macdonald, and Mr. Justice Martin, and their decision was rendered on January 4th, 1927. The decision of Mr. Justice Gregory in the Supreme Court was upheld by the Chief Justice and Mr. Justice McPhillips, with Mr. Justice Martin and Mr. Justice M. A. Macdonald dissenting. The effect of this division was to confirm the injunction and award of damages given by Mr. Justice Gregory.

The evidence given in the case was briefly as follows: Schuberg, the owner of the Empress Theatre in Vancouver, who had for a long time employed seven stage-hands, gave notice that after a certain date he would employ only five. The stage-hands and their union objected to this change, and a strike followed. The owner then engaged five new employees, and the union thereupon placed men at the entrance to the theatre, who distributed handbills addressed to "the theatre-going public of Greater Vancouver," stating in large type that "the Empress Theatre is unfair to organized labour." The union also caused motor-cars and sandwich-men displaying signs and banners bearing the same statement to parade before the entrance to the theatre. During the continuance of these acts the volume of business at the theatre was materially reduced.

The finding of Mr. Justice Gregory in the Supreme Court was that the actions of the union were done with the intention of injuring the plaintiff's business, and in the hope that to save himself from such injury he would return to the employment of the seven stage-hands. He therefore granted the injunction with damages.

In the Court of Appeal it was contended that the Provincial Act relating to trade-unions made picketing a lawful act. Omitting words not material, sections 2 and 3 of the Act are as follows:—

"2. No . . . trade-union . . . shall be enjoined . . . nor shall it or its funds . . . be made liable in damages for communicating to any workman, . . . labourer, employee, or person facts respecting employment or hiring by or with any employer, producer, or consumer or distributer of the products of labour or the purchase of such products, or for persuading or endeavouring to persuade by fair or reasonable argument, without unlawful threats, intimidation, or other unlawful acts, such workman, . . . labourer, employee, or person, to refuse to become the employee or customer of any such employer, producer, consumer, or distributer of the products of labour."

"3. No such trade-union . . . shall be enjoined or liable in damages, nor shall its funds be liable in damages, for publishing information with regard to a strike . . . or other

labour grievance or trouble, or for warning workmen . . . or other persons from purchasing, buying, or consuming products produced or distributed by the employer of labour."

The above sections were referred to by both Judges who gave judgment in the Court of Appeal. Chief Justice Macdonald, in holding that the appeal should be dismissed, said:—

"The Act of this Province, chapter 258, R.S.B.C., does not assist the defendants. It would protect them only against civil liability for the act of communicating information to workmen concerning the hiring with the employer and against liability for 'persuading or endeavouring to persuade by fair and reasonable argument without unlawful threats, intimidation, or other unlawful acts,' and against liability for warning workmen against seeking employment from the recreant employer. It does not protect them from liability for conspiring to injure the employer in his business and from intentionally injuring him."

Mr. Justice M. A. Macdonald in his judgment gave prominence to the right of "warning" given in section 3. He said:—

"It is not necessary that the 'warning' should be based on 'fair or reasonable argument' or confined to 'communicating facts' as in section 2. If such was intended these words should have been incorporated in section 3. If the handbills and banners answer the general description of a warning to intending patrons immunity is secured. One might suggest that the warning should not mislead the public as to the true facts—that it should not contain the expression of a biased opinion or make unwarranted assertions. But these considerations concern the law-making body, not the Courts. I must hold that, however crude the means employed, the handbills and banners did convey a warning of the existence of a strike or of a labour grievance, and that it affords an answer to the respondent's claim. It cannot be said that any one reading these handbills would not receive a warning that a trade dispute was going on. He may not, indeed will not, get the true facts in regard to it, but he does get a warning. . . . Nor do I think (without discussing whether or not the element of malice is an ingredient) that acts performed pursuant to legislative permission should be regarded as done maliciously."

Musicians, Vancouver.

In sympathy with the stage-hands at the same theatre, six musicians went out on January 11th, complaining also that an agreement had been violated. When the theatre closed down at the end of May employment conditions were no longer affected by the dispute.

Moulders, Vancouver and New Westminster.

This dispute, which affected the moulders employed at about a dozen shops in Vancouver and New Westminster, began on March 31st. Previous to the strike, moulders and core-makers were paid at the rate of $5.70 a day of eight hours, and the men asked that the daily rate be advanced to $6.50. A committee of the International Moulders' Union approached the employers, with a view to a discussion with a similar committee, but the employers stated that they preferred to deal with the men in their respective shops. Later the employers offered an advance of 15 cents a day, and, this being refused, after further deliberation they offered another 15 cents, to make the wage $6 a day. This also was considered unsatisfactory, and on March 31st about 160 men went on strike. The stoppage lasted for over four months, though from time to time small groups of men were taken back on their own terms. Efforts to bring about a joint conference were of no avail, and on August 12th the strike was called off by the union.

Higher Pay for Shipyard-workers.

Early in March the shipyard-workers of Vancouver and district formulated a request for an increase in wages; the carpenters, who were receiving $6.50 for an eight-hour day, asked for $7, and the caulkers asked for an increase from $6.75 to $7.50. On March 8th they gave the employers twenty days' notice to comply with these demands. The employers, however, refused to consider an increase of pay until the completion of work on existing contracts, and also complained that in some cases the class of workers supplied was unsatisfactory. When the notice for an increase expired the men agreed to continue work at the existing rates for another thirty days. Negotiations followed and were carried on until May 8th without any stoppage of work. On that date an agreement was made on the basis of a 50-cent per day increase for both classes, but the new rate not to become effective on existing contracts until August 1st. On new contracts and repair-work the new scale became operative on May 15th.

Painters, Vancouver.

The demand for a five-day week was the main feature of a dispute between the painters of Vancouver and their employers, which commenced on April 12th. Other demands were for an increase of pay from $6.50 to $7.50 a day and a closed shop. There were 220 men affected by the strike, which commenced on April 12th. Some of the employers met the situation promptly by offering $7 a day, with the question of a five-day week put back for further consideration. This led to a partial resumption of work, and in the course of a few days most of the men had gone back, no general agreement as to wages being reached.

Web Pressmen, Vancouver.

A dispute affecting eighteen web pressmen occurred in one of the newspaper offices in Vancouver, over an arrangement for changing the hours of employment on Saturday so as to do away with overtime on the Sunday paper. The normal working-hours had been from 8 a.m. to 5 p.m., with overtime rates for those working from 6 p.m. to midnight. The change had the effect of dividing the staff into three crews, the first working from 8 a.m. to 5 p.m., the second beginning work at 11 a.m., and the third at 1 p.m., the second and third crews finishing the run on the Sunday paper with little or no overtime. The dispute, which began on Saturday afternoon, April 24th, was settled at a conference between the employer and the men's international representative, it being agreed that the men should work on the new schedule. Work was resumed on the Monday morning, no Sunday paper having been issued.

Carpenters and a Five-day Week.

A proposal was put forward early in February by certain of the trade-unions in Vancouver and district, affecting chiefly the building trades, in favour of the introduction of a five-day working-week; in other words, for the suspension of work on Saturdays. Notice was given by the Carpenters' Union that their members would inaugurate the new plan on Saturday, May 1st. It was argued that the effect of the change would be to spread work over a longer period, thereby stimulating activity in the winter months; and also that the working-man was entitled to a rest on Saurday. On April 20th the Vancouver, New Westminster, and District Trades Council passed a resolution approving of the principle of a five-day working-week.

The demand came at a very busy period in the building trade and contractors strongly opposed it. Notices were posted on the jobs that all carpenters were expected to turn up for work on Saturday, May 1st, as usual, and that if they did not do so their names would be removed from the pay-rolls. The employers also stated that men who were prevented from working on that day "by some untoward circumstance," but who would report on the Monday morning and give an undertaking to work five and a half days in the week, would be kept in employment. Some of the contractors on small-house building were said to be willing to concede the five-day week, but all the employers with large contracts on hand refused to give in. If, they further said, a higher daily wage were to be secured as the result of the five-day week becoming general in Vancouver, it would result in more men coming to the city, with consequently less employment than ever to go round during the winter months.

On Saturday, May 1st, about 1,000 carpenters in Vancouver and district absented themselves from work and a large number answered a roll-call at the Labour Hall. It was stated by firms engaged on large contracts that the stoppage had been general, though the carpenters had not taken their tools off the jobs when they left work on the Friday. In addition to the 1,000 union carpenters who had left work, it was stated that there were 200 non-union men out, and that 250 brick-layers and 80 floor-layers were also affected.

On the Monday morning the men turned up for work, but in answer to the question, "Are you prepared to work more than five days a week, or will you continue to stay off on Saturdays?" nearly all of them answered that they were working a five-day week and no more. In accordance with the contractors' expressed intention, superintendents on the large contracts did not allow the men to start work, but on many of the house-building jobs in the suburbs work went on just as usual. As to the extent of the dispute, it was stated by union representatives that not more than 100 carpenters were being kept out of their jobs, but these were joined by a number of steel-workers, plasterers, and others, though denial was given to a statement that a sympathetic strike had been called.

As an offset to the demand for a five-day week, the next step was taken by the contractors, and was in the form of an offer to increase the pay of carpenters from $7 to $7.50 a day, on a working-week of five days and a half. A meeting of the men was called at short notice and was attended by 528. On a vote being taken, they rejected the employers' offer by a majority of about seven to two. However, on May 11th a conference was held between representatives of the General Contractors' Association and the Carpenters' Union, when the proposition was put forward for an immediate advance of pay to $7.50 for an eight-hour day and a continuance of the working-week of five and a half days until May 1st, 1927. This was agreed to and the strike was immediately called off, the parties agreeing to confer together sixty days before the lapse of the agreement, to discuss wages and conditions for the following year. Work was resumed on Wednesday, May 12th.

Firemen and Engineers, New Westminster.

Six firemen and engineers employed at a sawmill in New Westminster struck work on May 17th, a request for increased wages having been refused. The rates in effect were from $70 to $150 per month, and the scale requested by the men ranged from $120 to $200 per month. By the end of June the strikers had obtained work elsewhere and there was no formal settlement of the dispute.

Carpenters, Victoria.

The rate of pay for carpenters in Victoria and district, which was $6 per day, was the subject of a complaint by the Carpenters' Union, who pointed out that this wage was lower than was being paid to carpenters in the other leading cities of Western Canada. Negotiations for an increase were opened early in the spring, and later a specific request was made for an increase to $7 per day, to be effective from May 17th. In order that longer notice might be given to outside contractors, the date was afterwards changed to June 1st.

At a meeting of carpenters on May 22nd it was reported that the employers, or those of them who were members of the Builders' Exchange, had declined to meet the representatives of the men to discuss the proposed increase. By resolution it was decided to notify the Builders' Exchange that the men were prepared to sign a twelve months' agreement providing for a $7 a day wage. Failing a satisfactory reply before May 31st, the resolution called for a strike to commence on June 1st.

The men took the position from the beginning of the dispute that an agreement with the Builders' Exchange must be an essential part of any settlement. This was somewhat of a complication, as certain of the employers were better able than others to carry on their operations without the work of union carpenters. On the second day of the strike it was reported that eighty men had left work, and a number of non-union men made common cause with the union strikers, bringing the total of those affected up to 130. Through the efforts of Mr. J. D. McNiven, Deputy Minister of Labour, representatives of employers and employed were brought together for a conference on June 4th. The outcome was an offer by the Builders' Exchange to pay $6.50 for an eight-hour day, the new rate to commence on August 1st, and to be dependent upon the men returning to work immediately.

The carpenters took a ballot on this offer, and rejected it by a unanimous vote, also passing a resolution to stand out solidly for $7 a day and an agreement. The strike proceeded without further incident for two weeks longer, and then Mr. McNiven called another meeting of the parties on June 23rd. This was attended by the men's committee, but not by a full representation of the employers, and no immediate decision was possible; but another meeting was arranged for the following day, and on this occasion an agreement was signed by the Builders' Exchange and the Carpenters' Union.

The agreement was for an immediate resumption of work with an increase of pay from $6 to $6.50 per day, and a further increase to $7 at the beginning of September. Work was resumed on June 25th.

Stage Employees, Victoria.

Three employees at a theatre in Victoria left work on June 23rd over a dispute as to the number of men required to do the work. It was contended by the manager that the three men, whose total wages amounted to $124 a week, were doing work which he was able to do himself with one assistant and he asked that the staff be cut to two men, but this was not agreed to, and the men's places were filled.

Pile-drivers, Vancouver and New Westminster.

All the pile-drivers and bridge-workers on the Lower Mainland went on strike on July 1st and work was tied up on many contracts. Their demand was for an increase in wages of $1 a day. The employers offered to concede 50 cents a day, but this was not acceptable to the men as a body, though in a few instances work was resumed on that footing. The dispute continued until August 10th, when those of the men who were still out on strike agreed to accept the 50-cent increase and work was resumed. Eighty men were affected by the dispute.

Cannery Employees, New Westminster.

Some of the employees at a fruit and vegetable cannery who were working part time at piece-rates, complained that their earnings were very low, and refused to begin work on July 6th. They were told that they must begin work or lose their employment, and most of them returned to work, but eleven of them were discharged.

Musicians, Vancouver.

The International Federation of Musicians having called a strike in a number of cities in the United States, to enforce a demand for higher wages, the same terms were asked for on behalf of the musicians employed at theatres in Vancouver. It appeared very likely that there would be a strike on September 6th, the date when the men sought to have the new wage scale brought into effect, but negotiations at the last moment brought about a settlement. As a result the minimum weekly wage for musicians in first-class legitimate houses was fixed at $80 a week, with a minimum of $66 a week in big picture-houses, and of $48 a week in smaller houses.

Electrical Workers, Vancouver.

The linemen and groundmen working for a firm in Vancouver, to the number of seventeen, complained of the conditions under which they were working, one of them being that they were expected to cut a line which had been constructed by non-union workmen. They left work on October 1st and remained out until the 18th. Settlement was reached as the result of a conference, the employers conceding an increase of pay of 25 cents a day, to $7.75 for eight hours, and signing an agreement accepting the workmen's conditions.

Shingle-sawyers, Vancouver District.

About 90 men employed by three shingle firms in the Vancouver District left work respectively on November 5th, 8th, and 10th. The wages of shingle-sawyers had varied from time to time according to trade conditions, and at the beginning of November the employers submitted that owing to business depression they could no longer afford the rates of pay to which the men had been raised earlier in the year. There are conflicting accounts as to the course of events in the following few days. Employers submitted that the sawyers, after tacitly accepting a 10-per-cent. cut, which would have reduced their wages in some cases from $10 to $9 a day, suddenly refused to go on working. At one of the mills, however, the men's statement was to the effect that "the sawyers were notified on November 9th that a cut in wages was made to take effect November 1st. We were notified of a cut after we had worked eight days, and when we asked to discuss the matter we were simply told to either take a cut or go to the office and get our pay."

When the dispute had been in progress about a week the men agreed to accept a wage cut in accordance with the employers' terms. At one mill they resumed work on November 15th. At a second mill a Chinese crew was put on, but after the cut was accepted by the white men some of the latter were taken back from time to time. The third firm, who complained of the peremptory manner in which the men had struck, said they considered they were to some extent under an obligation to the six Oriental sawyers who had been taken on, though they preferred white men for the work. At the end of the year no formal settlement of the strike had been reported, conditions in the industry generally being rather unsettled.

SUMMARY OF LABOUR DISPUTES, 1926.

Industry or Occupation.	Particulars.	No. of Employees affected.	Time lost in Working-days.
Stage-hands— Vancouver	Commenced January 9th, at one theatre in Vancouver, owing to the management having reduced the working staff from seven to five. Dispute continued until the theatre closed down at the end of May. Legal proceedings arising out of the dispute are referred to on a previous page	7	850
Musicians— Vancouver	Commenced January 11th, in sympathy with stage-hands in above-mentioned dispute. Continued until the theatre closed down	6	720
Moulders— Vancouver and New Westminster	Commenced March 31st. The men asked for an advance of 80 cents a day. The employers offered 30 cents, but as the difference could not be adjusted the men left work. From time to time some of the men were taken back on their own terms, and on August 12th the strike was called off	160	12,000
Shipyard-workers— Vancouver	Carpenters and caulkers at shipyards in Vancouver asked for an increase, respectively from $6.50 to $7 and from $6.75 to $7.50 a day. They gave notice of their demands to expire on March 28th, but after that date negotiations were conducted without stoppage of work. The dispute was then settled on the basis of a 50-cent daily increase for both classes, not, however, to become effective on existing contracts until August 1st	------	--------
Painters— Vancouver	Commenced April 12th. The men demanded a five-day working-week, an increase in pay from $6.50 to $7.50 a day, and a closed shop. Some employers granted an increase of 50 cents a day, but work was resumed in a few days without a general agreement	220	500
Web Pressmen— Vancouver	Commenced April 24th. Affected one newspaper office in Vancouver, the men objecting to a new arrangement of hours to do away with overtime. Settled by conference, the men agreeing to work on the new schedule	18	36
Carpenters— Vancouver	The men desired to inaugurate a five-day working-week and absented themselves from work on Saturday, May 1st. Many contractors refused to allow them to resume work except on the basis of a five-and-a-half-day working-week, but announced that they were willing to consider an increase of pay of from $7 to $7.50 daily. On May 11th the dispute was settled on those terms	1,000	7,500
Firemen and Engineers— New Westminster	Commenced May 17th and affected men employed at one sawmill only. Increased wages were demanded and refused. No formal settlement	6	200
Carpenters— Victoria	Commenced June 1st. The men asked for an increase from $6 to $7 a day, secured by a twelve months' agreement. On June 24th an agreement was reached, the terms being an immediate advance of 50 cents a day and a further similar advance in two months	130	2,600
Stage Employees— Victoria	Commenced June 23rd, over a question as to the number of men required to do the work at one theatre. Men's places filled	3	30
	Carried forward	1,350	24,436

SUMMARY OF LABOUR DISPUTES, 1926—*Continued.*

Industry or Occupation.	Particulars.	No. of Employees affected.	Time lost in Working-days.
	Brought forward	1,550	24,436
Pile-drivers— Vancouver and New Westminster	Commenced July 1st. Men requested a wage increase of $1 a day and the employers offered 50 cents. On August 10th the men agreed to accept employers' offer	80	2,000
Cannery Employees— New Westminster	Commenced July 6th. Some of the female employees at a fruit and vegetable cannery complained that their piece-work earnings were very low and left work. The majority, however, went back on employer's terms	11	110
Electrical Workers— Vancouver	Commenced October 1st. Men in employ of one firm complained of working conditions, and also objected to cutting a line constructed by non-union workmen. Returned to work on their own terms on October 18th, and also received an increase in pay of 25 cents a day	18	270
Shingle-sawyers— Vancouver District	Commenced November 5th. Owing to depression in the industry, employers proposed a cut in wages, which the men refused to accept. After a week's stoppage the men agreed to a cut of 10 per cent., but the resumption of work in some cases was indefinitely delayed	90	1,200
		1,749	28,016

EMPLOYMENT SERVICE.

General Superintendent.....Jas. H. McVety, 714 Richards Street, Vancouver.

Branch Offices.

Vancouver, 714 Richards Street	W. S. Dickson, Superintendent.
Vancouver, 53 Powell Street	
Vancouver (Women's Branch), 714 Richards Street	
Victoria, Langley and Broughton Streets	H. Crisford, Superintendent.
Victoria (Women's Branch), Langley and Broughton Streets	
New Westminster	M. Standbridge, Superintendent.
Nanaimo	J. T. Carrigan, Superintendent.
Kamloops	J. H. How, Superintendent.
Penticton	A. Gilley, Superintendent.
Nelson	G. Anderson, Superintendent.
Cranbrook	Wm. Robson, Superintendent.
Revelstoke	H. N. Coursier, Superintendent.
Prince Rupert	J. M. Campbell, Superintendent.
Prince George	G. C. Sinclair, Superintendent.

The following report is submitted by the General Superintendent of the Employment Service:—

This statement, covering the work of the British Columbia branch of the Employment Service of Canada, a branch of the Department of Labour, is the eighth annual report and covers the calendar year 1926.

There are fourteen offices in operation in the Province, one less than during the previous year, the Vernon office having been closed at the end of November, changes in industrial conditions in the northern end of the Okanagan Valley making a full-time office no longer necessary. A temporary office was operated at Kelowna from June to November, during the fruit season, and if present conditions continue temporary offices will be opened in both Vernon and Kelowna during the summer months to take care of the labour requirements of fruit-growers and connected industries. The offices in operation are located as follows: Vancouver (3), Victoria (2), New Westminster, Nanaimo, Prince Rupert, Prince George, Cranbrook, Nelson, Revelstoke, Kamloops, and Penticton. In Vancouver and Victoria separate offices are provided for the employment of women, and special sections for dealing with the employment problems of men handicapped through service overseas or injured in industrial life.

Summary of Labour Conditions.

Measured by the number of persons employed throughout the Province, conditions during the period under review were practically as good as those obtaining during 1925, when 10 per cent. more persons were employed than during any previous year since 1920. There was, however, a surplus of labour in every part of the Province, and severe unemployment conditions in the Coast area during the winter months.

Despite steps taken by municipal authorities to discourage an influx of unemployed into the Coast cities during the winter, they came in large numbers, and it became necessary to provide a certain amount of relief-work for residents whose chances of employment were greatly reduced or entirely wiped out owing to the competition of so many new-comers. The situation became easier during the summer, but the surplus was sufficient to permit of the transfer of 7,400 harvesters to the Prairie Provinces during the month of August.

During the year the offices of the Employment Service placed a slightly larger number of persons than during 1925, a shrinkage of 20 per cent. in the number of harvesters sent out being more than compensated for by the increased number of placements within the Province. With the exception of a comparatively few positions for which workmen with special qualifications were required, principally in new industries or for operating imported machinery in existing plants, the Service was able to supply all the help required.

The Handicap sections of the Vancouver and Victoria offices continued the good work of the previous year and, despite the large number of handicapped workers engaged in industry, were able to exceed the number of placements recorded for the previous year. The number of

new arrivals from other parts of Canada and the British Isles, however, exceeded the number placed in positions with a prospect of permanence, so that no appreciable reduction in the number of unemployed has been effected.

Business transacted during the Year.

On other pages the details of the business transacted are shown by a chart and tables, the figures showing the work by offices and by months. The total number of placements show a slight increase as compared with the previous year, a contraction of 20 per cent. in the number sent to other Provinces being overcome by an increase in placements within the Province. Uncertain and unsatisfactory weather conditions in the Prairie Provinces accounted for the reduction in number of harvesters placed, many of those who enlisted for this work the previous year not having made sufficient surplus to justify the time, labour, and expense involved. Although there was a large surplus of labour in every part of the Province throughout the year, the number of employers who prefer to hire their help through the offices of the Service rather than interview applicants on the job is steadily increasing. A feature of interest was the number of persons transferred from one office zone to another, the Vancouver offices having forwarded 1,280 persons to fill orders received by other offices which could not be filled in the localities where the help was required. The number of persons placed during the year was 50,022, and of this number 31,066 were sent to "regular" positions, the duration of employment ranging from one week to permanence. The balance, 18,956, filled "casual" vacancies, where the work was expected to last less than one week, but often developed into employment at frequent intervals or permanent employment. The number of women placed was 9,295, and of this number 4,315 filled "regular" positions; the balance, 4,980, went to "casual" employment, principally in the domestic service branch.

The work of the Handicap sections of the Victoria and Vancouver offices, although included in the aggregate figures, is dealt with separately in another paragraph.

The chart on page 55 shows the rise and fall of applications for employment, employers' orders, and placements of applicants by weeks. Unlike previous years, the fluctuations are less marked, the only exception being during the dispatch of harvesters to the Prairie Provinces.

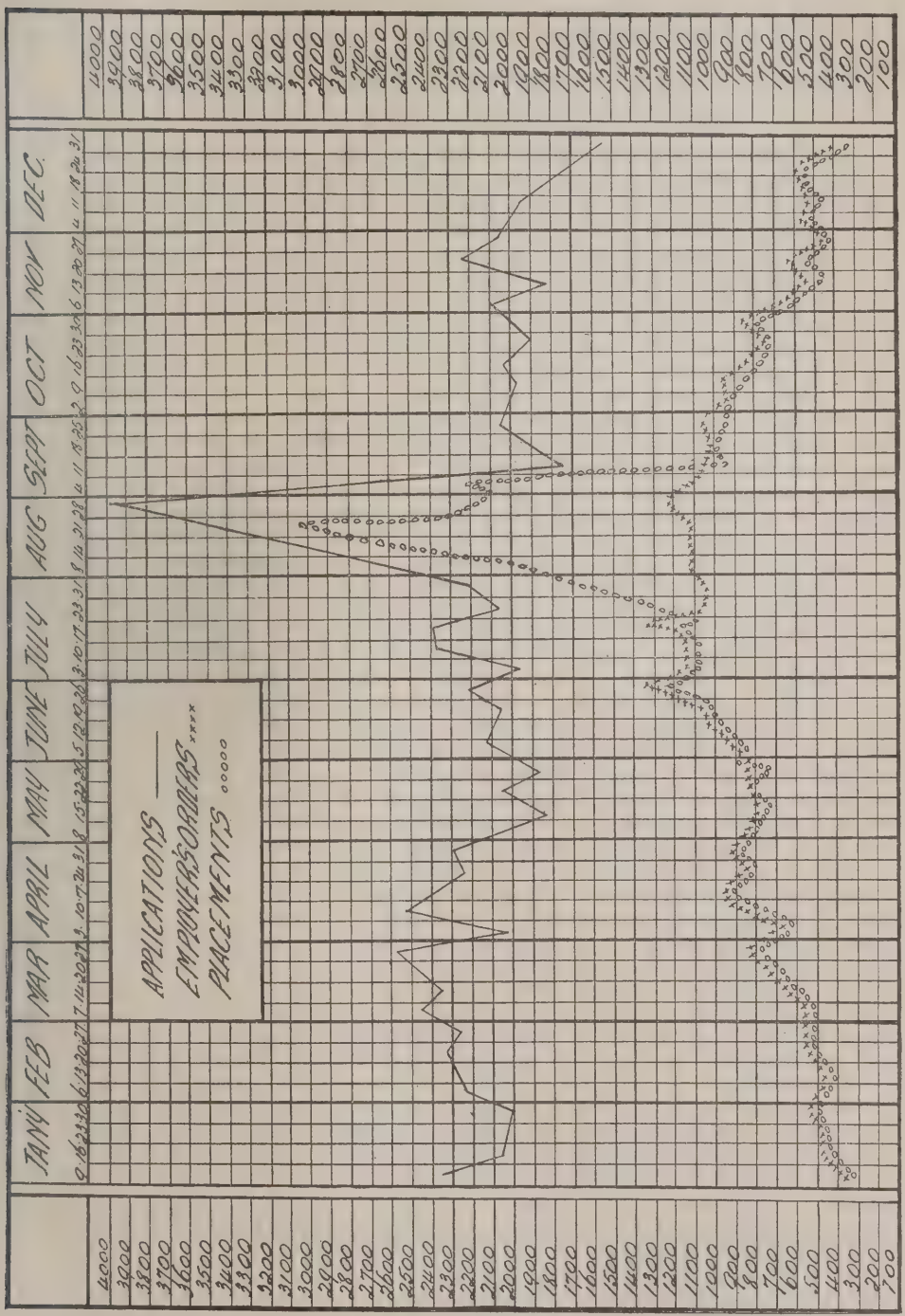
Harvest-labourers for Prairie Provinces.

The arrangement with the railways and the Employment Service of Alberta and Saskatchewan, whereby labourers are given reduced rates of travel, was continued during the season of the period under review. The number, however, was approximately 20 per cent. less than during 1925, the reduction resulting from unsatisfactory returns during the previous season due to uncertain and bad weather conditions. Of the 7,336 persons sent, Alberta received 2,547 men and 237 women, Saskatchewan 4,164 men and 304 women, and Manitoba 70 men and 24 women. There were 3,641 of the number went in possession of letters from farmers by whom they had previously been employed, offering employment for the season. From 294 rural communities 2,643 settlers were sent, an increase of 412 over the previous year. From the increasing number of settlers on the land in this Province who are taking advantage of the opportunity to earn money during the slack season on their own places, it is a safe conclusion that the harvest movement is a material aid to permanent land colonization in this Province. As usual, the demand from the Prairie Provinces for men from British Columbia was much greater than the supply, but again, unfortunately, the weather conditions were such that many of the men did not do as well financially as expected.

Seasonal Labour in Agriculture.

Ever since the growing of small fruits on the southern end of Vancouver Island and the Lower Mainland has reached the commercial stage, the problem of obtaining sufficient help to pick the crops has been more or less acute. The date when the help is required depends entirely on weather conditions, and uncertainty on this point, coupled with low rates of remuneration, makes the recruiting of sufficient help very difficult. The growth of hops on a large scale in the Fraser Valley is likely to accentuate the situation, unless the hop-picking comes at or near the end of the berry-picking season. On the other hand, there is always a plentiful supply of female help for canneries and other branches of industry in which the minimum wage rates are fixed by the Minimum Wage Board, and from this it would appear that the regulation of hours and

CHART SHOWING APPLICATIONS, VACANCIES, AND PLACEMENTS WEEK BY WEEK DURING 1926.



wages is the solution of the problems confronting those engaged in the fruit and hop industry on the Lower Mainland.

In the Okanagan Valley and the Kootenay and Crowsnest Districts the supply of local labour has been sufficient to meet the requirements, supplemented by quite a number of persons who go into the Interior for a change during the summer months.

Re-establishment of Handicapped Men.

Since December 1st, 1924, the work of placing handicapped ex-service men in employment, previously carried on by the Dominion Government Department of Soldiers' Civil Re-establishment, has been in the charge of the Employment Service, the expenses for additional staff required for this work being paid by the Dominion Government, it being the view of Dominion officials that the work can be better taken care of by a Department engaged exclusively in employment problems. Under the new arrangement special sections were created in the Vancouver and Victoria offices, and the employees in these sections devote their full time to the task of finding suitable employment for handicapped men registered for work, and finding suitable men to fill vacancies where employers are willing to accept men whose efficiency has been reduced by injuries received overseas or in industry.

Early in the year a Citizens' Committee was formed in Vancouver for the purpose of providing employment for handicapped ex-service men, the movement being supported by many leading citizens and the newspapers of the city. The organization also met with the approval of the Department of Soldiers Civil Re-establishment, and a grant of $150 per month was made for a period of three months towards the salary of the secretary. The objects of the organization were stated as follows:—

"The whole scheme is to have as its objective the stimulation of as wide interest as possible in order to provide greater opportunities for the employment of handicapped ex-service men, that the secretary shall work in the closest co-operation with the Employment Service of Canada and the Department of Soldiers Civil Re-establishment, calling in the assistance of appropriate members of the Advisory Committee when they can help."

Unfortunately this programme was not adhered to, with the result that some confusion occurred through the duplication of the form of organization and records already provided in the Handicap section of the Employment Service. The results obtained were negligible and at the end of three months the work was abandoned.

Reference was made in a previous report to the number of Canadian and Imperial pensioners in the Province, the approximate number being 7,000, and of these about three-quarters are located on the Lower Mainland and the southern end of Vancouver Island. It will be readily seen that this number of handicapped ex-service men added to those injured in industry has provided the Coast area of the Province with a problem greater than that of any similar area in Canada. The problem is further complicated by the absence of highly developed and widely specialized processes of refined manufactures such as are established in the older-settled communities. Logging, lumbering, fishing, and mining are what may be termed primary, extractive industries, and require men who are physically fit. Comparatively speaking, the list of casualties is high and difficulty is experienced in providing re-employment in these industries for those who unfortunately have had their faculties impaired through industrial accidents. In addition to the task of finding employment for handicapped men who have been in the Province for some time, there is a constant stream of new-comers, who, because of medical advice or a personal desire for milder climatic conditions, decide to make their homes in the Vancouver or Victoria districts. During the year 787 new arrivals registered for employment, and of this number 140 made application in Victoria and the balance, 547, in Vancouver.

The placements during 1926 totalled 2,087, almost 200 more than during the thirteen-month period covered by the previous report. Of the men sent to employment during the period under review, 773 went to positions where the work lasted for more than one week and in many instances became permanent. The balance, 1,314, filled short jobs where the duration was less than one week. The Victoria office was responsible for 227 "regular" and 587 "casual" placements; the remainder, 546 and 727 respectively, were arranged by the Vancouver office. It will be noted that the number of placements with possibilities of permanency was slightly smaller than the number of new arrivals during the year. Keeping in mind the nature of our industries and the number of handicapped men already in employment, the problem of finding work remains

one of the first magnitude. In justice to employers in the Coast area it must be conceded that they have done exceptionally well in absorbing handicapped men, but they cannot be expected to employ the host of new-comers who arrive in Vancouver and Victoria at the rate of approximately three per day. Many of these men, and of those who have been residents of the Province for longer periods, are entirely unfitted for any kind of work available here, and quite a large number, because of increasing debilities due to advancing age, are unable to perform any work, although their pensions are insufficient to maintain them. The problems presented by these men can only be solved by the Imperial and Dominion Governments providing sheltered employment for those still capable of performing some useful labour but unable to obtain employment in industry, and institutional care for those who are unable to work and who are in receipt of insufficient pension allowances to support them.

The Employment Service Policy.

In view of frequent statements by workmen that the offices of the Employment Service are instructed and give a preference of employment to newly arrived immigrants, it appears advisable to state that no such instructions have ever been received and that no such policy is being followed. The plan followed from the organization of the Service has been to give local residents of the districts in which the offices are located the first choice when filling vacancies, and not to transfer persons from one employment district to another except when absolutely necessary to meet requirements. In addition, for the purpose of saving time and money for unemployed workmen, weekly reports are on file in every office showing the labour-supply in all of the principal centres of the four Western Provinces, and this information is available to any workman who is considering moving to another district or Province. The aim is to place workmen in search of employment in contact with employers who require help, and to discourage workmen from going to districts where no opportunities of employment exist. The Immigration Department is kept advised regarding conditions throughout the Province and more particularly with respect to districts in which there is a surplus of labour. Many public and semi-public bodies refer all inquiries received from potential immigrants regarding labour conditions to officials of the Employment Service, on the understanding that accurate up-to-date information will be supplied.

Employment-work is difficult to carry on satisfactorily under the best of conditions, but the small number of complaints received, and the degree of support received from employers, workmen, labour organizations, and public bodies generally, appears to warrant the view that during the eight years the Employment Service of Canada has been in existence the results obtained have justified the judgment of those responsible for its organization.

Business transacted by Offices, 1926.

Office.	Applications.	Employers' Orders.	Placements.	Transfers in B.C.	Transfers to other Provinces.
Cranbrook	4,295	2,514	2,376	9	103
Kamloops	3,642	1,452	1,238	31	280
Kelowna	1,495	1,053	845	9	83
Nanaimo	3,752	1,584	1,573	.....	.....
Nelson	5,591	1,439	1,272	38	298
New Westminster	5,124	1,708	1,662	2	635
Penticton	2,646	1,453	1,368	5	102
Prince George	1,563	1,153	1,090	15	348
Prince Rupert	7,303	1,134	1,036	4	334
Revelstoke	1,139	379	324	.....	20
Vancouver (Richards Street)	29,145	4,941	4,615	454	4,720
Vancouver (Powell Street)	22,326	11,034	10,981	686	10
Vancouver (Women)	12,937	6,847	5,906	140	456
Vernon	3,446	833	762	2	175
Victoria	10,076	4,731	4,721	14	397
Victoria (Women)	3,152	2,337	2,224	13	68
Totals	117,632	44,592	41,993	1,422	8,029

Business transacted Monthly, 1926.

Month.	Applications.	Employers' Orders.	Placements.	Transfers in B.C.	Transfers to other Provinces.
January	10,017	2,277	2,212	37	.....
February	9,113	2,074	2,008	50	17
March	9,847	2,846	2,742	63	95
April	9,315	3,739	3,592	127	318
May	10,007	4,651	4,380	97	96
June	8,540	4,721	4,084	126	27
July	10,844	6,180	5,912	127	21
August	13,501	4,599	4,166	180	6,190
September	8,587	4,238	3,983	269	1,253
October	9,951	4,343	4,162	259	11
November	8,401	2,246	2,170	43	1
December	9,509	2,678	2,582	44	.....
Totals	117,632	44,592	41,993	1,422	8,029

INSPECTION OF FACTORIES.

Chief Inspector.....R. J. Stewart.
Assistant Inspector.....H. Douglas.
Assistant Inspector.....Miss A. C. McMullin.
Assistant Inspector.....Miss Violet Smart.
(Office.....Court-house, Vancouver.)

The following report is submitted by the Chief Inspector of Factories:—

In submitting the annual report of the Factory Inspection Department for the year 1926, I am glad to be able to report continued activity in the industrial life of the Province. As our duties require us to visit all factories in which three or more persons are employed, we are thus enabled to form a fairly accurate estimate as to the prevailing state of trade in the Province.

In a report of this nature it is rather difficult to give an entire résumé of the work performed during the past year, as our duties to a certain extent are of a routine nature. However, we have no hesitation in stating each succeeding year brings a noticeable improvement in the safety, sanitary, and lighting conditions of the factories coming under our jurisdiction.

The efforts of the Department of Factory Inspection to assist in conserving the life and limb of workers employed in industrial establishments has with very few exceptions met with voluntary recognition on the part of those to whom orders were issued respecting dangerous conditions. Conclusive proof that the factories in the Province are yearly becoming safer places in which to earn a livelihood is evidenced by the fact that we are not called upon to investigate as many major accidents, and the necessity of our attendance at Coroners' inquests is steadily decreasing. These results have been attained largely through the whole-hearted co-operation of the owners, managers, and workmen engaged in the operation of the plants over which we exercise supervision relating to the safety of those employed therein.

We still occasionally meet some individuals not easily converted to safe practices, who prefer to continue to work in the old familiar way, despising safety devices and improved and safe methods, arguing that guards cause inconvenience and decrease production. Persons with these views are a menace to themselves and all others employed in the plant. The value of guards has been proven in too many cases to allow of any reasonable doubt as to their efficiency, and any reluctance upon the part of an employee to use and maintain them in position requires stern disciplinary measures.

Elevators.

The efforts of this Department to conserve life and limb of workers employed in industrial plants is applied with equal force to the conservation of life and limb of the public in so far as transportation by passenger-elevators is concerned.

During the past year a great many new elevators have been installed in order to keep pace with the demands for this class of transportation. All new installations have been provided with some form of interlocking device which prevents the operator from starting the car before the doors are closed and locked.

Passengers or would-be passengers often expose themselves to serious injury by following sudden impulses. That this is true we cite the following example: In one of our large office buildings one of the tenants in the building was waiting to be taken to the main floor. The first elevator to pass the floor at which he was waiting was travelling in the "up" direction. The operator, according to a report made to this office, stated that after stopping at that floor she opened the doors and inquired if he was going up; he replied, "No, I am going down." The operator proceeded to close the shaftway doors intending to complete the run and pick him up on the downward trip. For some unaccountable reason the waiting passenger grabbed the door, pushed it open, and tried to board the ascending car, with the result that he was crushed between the car platform and the top of the door, receiving injuries which necessitated the amputation of a portion of his left leg.

Our records show that the majority of personal injuries received by the public have occurred when entering or leaving the car.

As various types of interlocking devices which will prevent this type of accident are available, we believe they should be included in the equipment of all passenger-elevators.

Complaints.

Many of the complaints received at this office are by phone and are from persons who are employed in work-rooms where the lighting and ventilation are poor. In following up these complaints, we invariably find that we have no jurisdiction regarding the matters complained of, owing to the fact that these work-rooms are not factories as defined by the "Factories Act," which stipulates that three or more persons must be employed before we can insist upon compliance with the several sections of the "Factories Act." As a great many of these complaints are made anonymously by some person employed in the work-rooms referred to, we presume they are at a loss to understand why the conditions complained of are not remedied.

Prosecutions.

With the exception of some laundry-owners operating their factories during prohibited hours, no prosecutions for infractions of the "Factories Act" were instituted during the year. We have, however, on several occasions had to set a final time-limit before the desired results were obtained. It has been the policy of this Department not to prosecute until after every opportunity has been afforded the employers and employees to comply with the law after having been informed of its requirements.

Overtime Permits.

Owing to the exigencies of the trade, quite a number of requests have been made for overtime permits. These have been granted in all cases where our investigations warranted the issuing of same.

Factory Conditions.

Factories which are located in buildings designed for the exclusive use of that particular industry, as a rule comply with the requirements of the "Factories Act," or can be made so with minor alterations.

It is in rented or leased premises in which a number of small industries are located, and in which divided responsibility exists, that we experience our greatest trouble in obtaining compliance with the several sections of the "Factories Act." Owing to a combination of circumstances, we have during the past year been forced to insist upon rather extensive structural alterations being made to several buildings before proper ventilation, lighting, and heat for the employees could be obtained.

REPORT OF THE MINIMUM WAGE BOARD.

Officials of the Board:
Miss Mabel A. Cameron, Secretary.....Parliament Buildings, Victoria.
Miss Violet Smart, Inspector.....Court-house, Vancouver.

To the Honourable the Minister of Labour,
Province of British Columbia.

Sir,—The report of the Minimum Wage Board of British Columbia for the year ended December 31st, 1926, is submitted herewith, being the ninth annual summary of the Board's administration of the Act and Orders relating to women and girl employees. Nine Orders have been promulgated, covering a variety of occupations and industries in which women are engaged.

Conference on Fruit and Vegetable Industry.

In August the Order relating to the Fruit and Vegetable Industry was reopened at the request of employees, who filed a petition with the Board in accordance with the procedure prescribed by the Act for that purpose.

A Conference was convened in Vancouver, the sessions being held at the Court-house on August 20th. In order to give all interested persons an opportunity to be heard meetings were called morning, afternoon, and evening. Employers were represented by Mr. H. C. Wade, of the Dominion Canners (B.C.), Ltd., Vancouver; Mr. J. A. Wattie, of the Western Packing Corporation, Ltd., Vancouver; Mr. A. L. Watson, of the Farmers' Canning Company, Mission City; and Mr. Wm. O'Neill, of the Kelowna Growers' Exchange, Kelowna. The interests of the employees were looked after by Mrs. E. C. T. Venables, of Penticton; Mrs. D. B. McClement, Kelowna; Mrs. N. Wilson and Miss I. Anderson, both of Vancouver. The Board selected Mrs. H. P. Hodges, of Victoria; Mrs. A. Wells Gray, of New Westminster; and Mrs. J. H. Miller, of Vernon, to represent the public. Mr. J. D. McNiven, Chairman of the Board, presided at the meetings, with his colleagues, Mrs. Helen Gregory MacGill and Mr. Thomas Mathews, also in attendance.

The Chairman outlined the procedure to be followed by the Conference, and invited testimony from any one in the audience. Many views were presented and ideas advanced for the improvement of the existing Order, which had been in effect since 1922, much stress being laid on different phases of the piece-work problem. After lengthy and unhurried deliberation the conferees unanimously recommended to the Board that the minimum wage for every experienced female employee in the fruit and vegetable industry be the sum of $14.40 for a week of forty-eight hours, either on a time or piece-rate basis. This was an increase of 40 cents over the rate in the previous Order. Hourly rates of 30 cents were recommended for work up to and including ten hours a day, after which the rate should be 45 cents an hour.

For inexperienced workers the Conference recommended a weekly rate of $11 during the first two months' employment in the industry, this sum to be paid for either time- or piece-work. An hourly rate of 23 cents was prescribed for work up to and including ten hours a day. Work in excess of ten hours would entitle the employee to 35 cents an hour; these rates to apply whether the basis of employment happened to be time or piece-work. The former Order allowed three months in which to become experienced.

After due consideration the Board accepted these recommendations, basing an Order thereon, which became effective sixty days from September 3rd, 1926.

When it is realized that 2,455 women employees were reported as being employed in this industry in canneries and packing plants for the busy part of 1926 the importance of the new Order will be appreciated.

Collection of Arrears.

While most employers are complying with the provisions of the Board's Orders, there are occasions on which, through ignorance or oversight, an employee is not paid in accordance with the terms of the Order under which she is working. As instances of this kind come to the notice of the Board measures are taken to effect amicable settlements, which, fortunately, are successful in the majority of cases. A natural timidity on the part of employees and a marked aversion to publicity attendant on Court actions leads the Board and its officials to take such drastic means as infrequently as possible. In consequence of this policy, by personal investigation and through

correspondence, the sum of $3,315.01 in arrears of wages was collected for underpaid employees. This amount was made up of sums ranging from 75 cents to $400. The woman who received the latter figure had been deprived systematically of a considerable amount each week for a number of months.

These collections were negotiated in Vancouver, Victoria, Duncan, Salmon Arm, New Westminster, Mission City, Nelson, Nakusp, Revelstoke, Kamloops, Chilliwack, Penticton, and other parts of the Province. The girls to benefit by the provision of the Act enabling them to receive their arrears were employed in various occupations. Hotel and restaurant employees, factory-workers, beauty-parlour attendants, fruit-cannery help, office clerks, dental assistants, laundresses, telephone operators, all shared in obtaining amounts to make up their correct legal wage.

A Few Court Cases.

1. Early in the year a manufacturer's agent was found to be paying his office clerk much lower wages than those prescribed by the Order. Upon the Inspector making a personal investigation the employer expressed his disapproval of the regulations and assumed a defiant attitude towards the law. An information was laid against him for failure to pay the minimum wage. When the case came up for hearing the defendant did not appear and a remand was taken. Next time he was present at the opening of Court but disappeared when his name was called. The case, however, was proceeded with and the employer fined $25 or, in default, ten days. He thereupon put in his appearance and paid the fine. The employee sued for her arrears in the Small Debts Court.

2. An employer in Vancouver paid an office clerk less than her just due. A case was started against him, and when the Police Magistrate heard the evidence he said the accused did not deserve to be let off with the minimum fine, and ordered that a penalty of $50 be imposed, or, in default, thirty days.

3. The owners of a tea-room employed a young lady for less wages than the Public Housekeeping Order required. Proceedings were instituted in the Police Court, and when the case was called a plea of guilty was entered. The Magistrate imposed a fine of $25.

4. In a Vancouver laundry the Inspector found that one of the employees had not been paid the correct wage for the time worked. The case was taken to Court and a conviction registered against the company. A $25 fine was ordered to be paid by the employer.

5. An establishment manufacturing candies and confectionery failed to pay the wage prescribed by the Order relating to the Manufacturing Industry. Police Court proceedings were commenced, and after one remand the employer, through his counsel, pleaded that he was manufacturing an article which was sold to the public and the price included cost of production. Counsel then said he was attacking the Act on the grounds that it was indirect taxation. The prosecutor replied that an argument of that nature could not be advanced in the Police Court. An adjournment was granted to communicate with the Attorney-General. However, when the case came up again, counsel for the defendant pleaded guilty and a fine of $25 was imposed by the presiding Magistrate.

6. For permitting two girls to work excessive hours a café proprietor in one of the smaller towns was taken to Court, two informations being laid against him. At the trial he entered a plea of guilty to one charge, whereupon the second charge was withdrawn. A fine of $25 was ordered to be paid.

Statistical Report.

The pay-roll returns required from employers each year were sent in by 3,123 firms, against 2,804 for the previous year. With this increase of 319 reporting firms details of wages and working-hours were submitted for 16,070 women and girl employees. This is an advance of 2,171 over the 1925 total, which accounted for 13,899 employees.

To analyse the returns they were divided into nine groups, corresponding to the classifications covered by the Orders of the Board. Separate tables have been compiled for each industry for which an Order has been made. For 1926 the information was supplied for the week of the greatest employment. The figures appearing in the following tables are so tabulated that comparisons with those of former years may be readily made.

Reference to the Appendix of this report will make clear exactly what classes of work are included in each grouping. A summary of each Order in convenient form may also be found in the Appendix.

MERCANTILE INDUSTRY.

	1926.	1925.	1924.	1923.	1922.
Number of firms reporting	466	382	335	325	320
Number of employees—					
Over 18 years	2,820	2,574	2,124	2,000	1,828
Under 18 years	456	442	341	364	283
Total weekly wages—					
Employees over 18 years	$42,508.65	$39,017.26	$32,203.49	$30,520.25	$27,577.19
Employees under 18 years	$4,222.50	$4,000.50	$3,028.00	$3,321.00	$2,682.00
Average weekly wages—					
Employees over 18 years	$15.07	$15.16	$15.16	$15.26	$15.09
Employees under 18 years	$9.26	$9.05	$8.88	$9.12	$9.48
Percentage of employees under 18 years	13.92%	14.66%	13.83%	15.4%	13.4%
Average hours worked per week	44.54	43.24	42.95	42.95	43.7

For a week of 48 hours the minimum wage for experienced employees is $12.75; 727 or 22.19 per cent. of all employees reported received this amount, 1,841 or 56.20 per cent. of all employees reported received more than this amount, and 708 or 21.61 per cent. of all employees reported received less than this amount. Those receiving less than the $12.75 included girls under 18, for whom lower rates are set, inexperienced workers over 18 years of age, and employees who worked less than 48 hours and received pay on a *pro rata* basis.

LAUNDRY INDUSTRY.

	1926.	1925.	1924.	1923.	1922.
Number of firms reporting	59	53	53	53	46
Number of employees—					
Over 18 years	799	654	625	558	474
Under 18 years	123	101	84	60	101
Total weekly wages—					
Employees over 18 years	$11,484.90	$9,545.70	$8,859.00	$8,026.50	$6,880.00
Employees under 18 years	$1,288.50	$1,085.00	$889.00	$667.00	$1,215.50
Average weekly wages—					
Employees over 18 years	$14.37	$14.60	$14.17	$14.38	$14.51
Employees under 18 years	$10.48	$10.74	$10.58	$11.12	$12.03
Percentage of employees under 18 years	13.34%	13.38%	11.85%	9.71%	17.57%
Average hours worked per week	45.02	45.46	43.69	44.33	44.73

For a week of 48 hours the minimum wage for experienced employees is $13.50; 248 or 26.90 per cent. of all employees reported received this amount, 393 or 42.62 per cent. of all employees reported received more than this amount, and 281 or 30.48 per cent. of all employees reported received less than this amount. Those receiving less than the $13.50 included girls under 18, for whom lower rates are set, inexperienced workers over 18 years of age, and employees who worked less than 48 hours and received pay on a *pro rata* basis.

PUBLIC HOUSEKEEPING OCCUPATION.

	1926.	1925.	1924.	1923.	1922.
Number of firms reporting	399	356	314	287	287
Number of employees—					
Over 18 years	1,644	1,450	1,316	1,174	1,171
Under 18 years	79	67	49	47	44
Total weekly wages—					
Employees over 18 years	$27,264.81	$23,763.16	$21,493.42	$19,164.50	$18,718.25
Employees under 18 years	$1,114.50	$990.50	$730.00	$686.50	$658.00
Average weekly wages—					
Employees over 18 years	$16.59	$16.39	$16.33	$16.32	$15.98
Employees under 18 years	$14.11	$14.78	$14.90	$14.61	$14.95
Percentage of employees under 18 years	4.59%	4.42%	3.59%	3.85%	3.62%
Average hours worked per week	45.54	45.38	45.97	45.42	46.23

For a week of 48 hours the minimum wage for experienced employees is $14; 344 or 19.96 per cent. of all employees reported received this amount, 1,163 or 67.50 per cent. of all employees reported received more than this amount, and 216 or 12.54 per cent. of all employees reported received less than this amount. Those receiving less than the $14 included girls under 18, for whom a lower rate is set, a few inexperienced workers over 18 years of age, and employees who worked less than 48 hours and received pay on a *pro rata* basis.

Office Occupation.

	1926.	1925.	1924.	1923.	1922.
Number of firms reporting	1,636	1,523	1,171	1,133	1,097
Number of employees—					
Over 18 years	3,609	3,354	2,799	2,595	2,502
Under 18 years	147	128	92	93	91
Total weekly wages—					
Employees over 18 years	$68,838.71	$66,215.99	$54,758.49	$50,285.00	$48,341.00
Employees under 18 years	$1,878.00	$1,640.00	$1,113.50	$1,155.50	$1,110.50
Average weekly wages—					
Employees over 18 years	$19.07	$19.74	$19.56	$19.38	$19.32
Employees under 18 years	$12.78	$12.81	$12.10	$12.42	$12.20
Percentage of employees under 18 years	3.91%	3.68%	3.18%	3.5%	3.5%
Average hours worked per week	41.94	41.84	41.9	41.90	41.93

For a week of 48 hours the minimum wage for experienced employees is $15 (monthly wage $65); 519 or 13.82 per cent. of all employees reported received this amount, 2,858 or 76.09 per cent. of all employees reported received more than this amount, and 379 or 10.09 per cent. of all employees reported received less than this amount. Those receiving less than the $15 included girls under 18, for whom lower rates are set, inexperienced workers over 18 years of age, and employees who worked less than 48 hours and received pay on a *pro rata* basis.

Personal Service Occupation.

	1926.	1925.	1924.	1923.	1922.
Number of firms reporting	76	65	34	34	32
Number of employees—					
Over 18 years	266	221	126	91	78
Under 18 years	19	18	22	18	19
Total weekly wages—					
Employees over 18 years	$4,381.00	$3,824.20	$2,009.79	$1,534.68	$1,196.00
Employees under 18 years	$214.00	$220.00	$239.50	$208.00	$214.00
Average weekly wages—					
Employees over 18 years	$16.47	$17.30	$15.95	$16.87	$15.33
Employees under 18 years	$11.26	$12.22	$10.89	$11.56	$11.26
Percentage of employees under 18 years	6.67%	7.53%	14.86%	16.51%	19.59%
Average hours worked per week	38.67	36.15	38.14	40.07	38.03

For a week of 48 hours the minimum wage for experienced employees is $14.25; 29 or 10.18 per cent. of all employees reported received this amount, 174 or 61.05 per cent. of all employees reported received more than this amount, and 82 or 28.77 per cent. of all employees reported received less than this amount. Those receiving less than the $14.25 included girls under 18, for whom lower rates are set, inexperienced workers over 18 years of age, and employees who worked less than 48 hours and received pay on a *pro rata* basis.

FISHING INDUSTRY.

	1926.	1925.	1924.	1923.	1922.
Number of firms reporting	4	4	4	7	9
Number of employees—					
Experienced	26	21	34	31	50
Inexperienced	----	2	5	1	15
Total weekly wages—					
Experienced employees	$496.25	$489.50	$601.44	$489.50	$778.00
Inexperienced employees	------	$24.00	$55.00	$13.50	$181.50
Average weekly wages—					
Experienced employees	$19.09	$23.31	$17.69	$15.79	$15.56
Inexperienced employees	------	$12.00	$11.00	$13.50	$12.10
Percentage of inexperienced employees	------	8.7%	12.82%	3.12%	23.08%
Average hours worked per week	48.00	47.13	50.59	49.12	46.08

For a week of 48 hours the minimum wage for experienced employees is $15.50; 4 or 15.38 per cent. of all employees reported received this amount, and 22 or 84.62 per cent. of all employees reported received more than this amount.

TELEPHONE AND TELEGRAPH OCCUPATION.

	1926.	1925.	1924.	1923.	1922.
Number of firms reporting	103	86	97	94	83
Number of employees—					
Experienced	1,373	1,312	1,192	1,089	1,084
Inexperienced	236	220	218	204	142
Total weekly wages—					
Experienced employees	$24,386.21	$23,605.31	$21,256.75	$19,426.18	$18,698.50
Inexperienced employees	$2,842.50	$2,655.00	$2,555.50	$2,289.50	$1,550.00
Average weekly wages—					
Experienced employees	$17.76	$17.99	$17.83	$17.84	$17.25
Inexperienced employees	$12.04	$12.07	$11.72	$11.22	$10.92
Percentage of inexperienced employees	14.67%	14.36%	15.46%	15.78%	11.58%
Average hours worked per week	41.22	42.64	42.29	41.34	41.53

For a week of 48 hours the minimum wage for experienced employees is $15; 291 or 18.08 per cent. of all employees reported received this amount, 938 or 58.30 per cent. of all employees reported received more than this amount, and 380 or 23.62 per cent. of all employees reported received less than this amount. Those receiving less than the $15 included inexperienced employees for whom lower rates are set and employees who worked less than 48 hours and received pay on a *pro rata* basis.

MANUFACTURING INDUSTRY.

	1926.	1925.	1924.	1923.	1922.
Number of firms reporting	335	296	240	234	231
Number of employees—					
Experienced	1,491	1,471	1,262	1,107	1,093
Inexperienced	527	329	218	249	203
Total weekly wages—					
Experienced employees	$25,343.79	$24,415.40	$20,510.60	$18,707.46	$17,485.00
Inexperienced employees	$6,182.00	$3,409.00	$2,235.00	$2,494.50	$2,150.50
Average weekly wages—					
Experienced employees	$17.00	$16.60	$16.25	$16.90	$16.00
Inexperienced employees	$11.73	$10.36	$10.25	$10.02	$10.59
Percentage of inexperienced employees	26.11%	18.28%	14.73%	18.36%	15.66%
Average hours worked per week	44.51	44.77	43.65	43.82	43.92

For a week of 48 hours the minimum wage for experienced employees is $14; 439 or 21.75 per cent. of all employees reported received this amount, 1,031 or 51.09 per cent. of all employees

reported received more than this amount, and 548 or 27.16 per cent. of all employees reported received less than this amount. Those receiving less than the $14 included inexperienced employees for whom lower rates are set and employees who worked less than 48 hours and received pay on a *pro rata* basis.

FRUIT AND VEGETABLE INDUSTRY.

	1926.		1925.		1924.	
Number of firms reporting	45		39		39	
	Time.	Piece.	Time.	Piece.	Time.	Piece.
Number of employees—						
Experienced	1,262	435	783	341	625	252
Inexperienced	255	503	222	189	148	65
Total weekly wages—						
Experienced employees	$21,920.13	$7,377.08	$13,913.21	$6,923.65	$9,849.70	$4,975.19
Inexperienced employees	$2,520.00	$3,251.50	$2,170.00	$1,570.00	$1,225.50	$573.50
Average weekly wages—						
Experienced employees	$17.37	$16.96	$17.77	$20.30	$15.76	$19.74
Inexperienced employees	$9.88	$6.46	$9.77	$8.31	$8.28	$8.82
Percentage of inexperienced employees	30.88%		26.78%		19.54%	
Average hours worked per week (time-workers)	47.01		47.56		43.29	

For a week of 48 hours the minimum wage for experienced employees is $14; 109 or 4.44 per cent. of all employees reported received this amount, 1,063 or 43.30 per cent. of all employees reported received more than this amount, and 1,283 or 52.26 per cent. of all employees reported received less than this amount. Those receiving less than the $14 included inexperienced employees for whom lower rates are set and employees who worked less than 48 hours and received pay on a *pro rata* basis. In this industry there is much short-time employment, particularly at the beginning and end of the season.

SUMMARY OF ALL OCCUPATIONS.

	1926.	1925.	1924.	1923.	1922.
Number of firms reporting	3,123	2,804	2,287	2,195	2,135
Number of employees—					
Over 18 years, or experienced	13,725	12,181	10,355	9,612	8,989
Under 18 years, or inexperienced	2,345	1,718	1,242	1,251	1,242
Total weekly wages—					
Employees over 18 years, or experienced	$234,001.53	$211,713.38	$176,517.87	$164,712.57	$152,890.94
Employees under 18 years, or inexperienced	$23,513.50	$17,764.00	$12,644.50	$12,511.50	$12,546.50
Average weekly wages—					
Employees over 18 years, or experienced	$17.05	$17.38	$17.05	$17.14	$17.00
Employees under 18 years, or inexperienced	$10.03	$10.34	$10.18	$10.00	$10.10
Percentage of employees under 18 years, or inexperienced	14.59%	12.36%	10.71%	11.52%	12.14%
Average hours worked per week	43.82	43.58	43.09	43.31	43.28

It is the earnest aim of the Board each year to receive returns from more employers than for the previous period, and for 1926 it was not disappointed. By adding new firm-names to its index and by receiving pay-rolls from establishments that had not made an accounting in former years an appreciable gain was noted in this respect. The result of this increase is reflected in the number of workers reported gainfully employed—namely, 13,725 over 18 years of age or experienced, as against 12,181 for 1925, and 2,345 under 18 or inexperienced, in comparison with 1,718 for 1925.

There has been a general tendency in practically all the occupations towards a slight decrease in average wages, which, however, still remain well above the minimum prescribed by the Board. The public housekeeping occupation and the manufacturing industry are the two groups that register advances over the 1925 averages.

Marital Status.

For the second time the pay-roll form for 1926 statistics provided columns in which the employer recorded whether the employee was married, widowed, or single. In the fruit and vegetable industry the married women comprise a large proportion of the workers, but one must bear in mind that the product they work with is very perishable and at the peak of the season all available help is pressed into service.

A glance at the following table shows the marital status of the women employees in each occupation:—

Name of Industry.	Married.	Widowed.	Single.	Total.
Mercantile	497	184	2,595	3,276
Laundry	248	35	639	922
Public housekeeping	529	144	1,050	1,723
Office	340	92	3,324	3,756
Manufacturing	385	107	1,526	2,018
Personal service	63	12	210	285
Telephone and telegraph	51	25	1,533	1,609
Fishing	15	1	10	26
Fruit and vegetable	981	35	1,439	2,455
Totals	3,109	635	12,326	16,070

Table showing Labour Turnover in each Group—Number of Employees in Continuous Service of Employer reporting.

Name of Industry.	Not specified.	Under 1 Year.	1 to 2 Years.	2 to 3 Years.	3 to 4 Years.	4 to 5 Years.	5 to 6 Years.	6 to 7 Years.	7 to 8 Years.	8 to 9 Years.	9 to 10 Years.	10 Yrs. or over.	Number of Employees reported.	Number of Firms reporting.
Mercantile	33	1,513	531	372	261	166	121	84	67	39	20	69	3,276	466
Laundry	205	313	117	84	74	36	31	28	13	8	4	9	922	59
Public housekeeping	19	977	285	155	100	49	37	28	22	12	9	30	1,723	399
Office	78	929	601	487	382	274	218	248	125	118	76	220	3,756	1,636
Manufacturing	100	802	302	248	147	112	81	68	45	37	17	59	2,018	335
Personal service	42	99	56	23	36	9	2	3	6	4	1	4	285	76
Telephone and telegraph	1	370	309	256	171	99	88	131	43	37	30	74	1,609	103
Fishing	3	20	1	1	.....	1	.....	.....	.....	.....	.....	.....	26	4
Fruit and vegetable	545	1,460	147	130	65	54	21	14	6	7	3	3	2,455	45
Totals	1,026	6,483	2,349	1,756	1,236	800	599	604	327	262	160	468	16,070	3,123

Terms of Service.

In order to arrive at the labour turnover in each industry the foregoing table was prepared from actual figures submitted by employers relative to the time each worker had been with her firm. The desired information was omitted from some forms, and the ultimate result was that for 1,026 employees or 6.38 per cent. of the total number the length of service was not specified.

Fluctuation in some occupations was more apparent than in others. In the mercantile industry it will be noted that approximately half the employees had been with the firms by whom they were reported for a period less than one year Turning to the office occupation,

where service is more steady, one finds that those whose record did not comprise a year's work is practically only one-fourth of the total in that line of work.

If a study is made of the totals for all groups it will be found that 40.34 per cent. of the reported employees had been with their employers less than one year. At the other end of the table 2.91 per cent. had been steadily employed for a period of ten years or more.

High Wage and Long Service.

In going over the annual pay-roll forms note was taken of the highest individual weekly wage in each occupation and the term of longest service.

The record wage in the mercantile industry was drawn by a Vancouver employee who receives $65 a week. A Victoria firm has three employees who each have a service record of 21 years of steady employment.

The highest weekly wage in the laundry industry—$28—was paid in a Vancouver establishment. A report from Nelson revealed that an employee had been with one firm for 25 years.

In the public housekeeping occupation a weekly remuneration of $31 stands at the top of the wage scale in this line of work. Continuous employment covering a period of 18 years is the longest reported. Both these records occur in a Victoria hotel, but they do not apply to the same employee.

Two Vancouver firms vie for honours in the office occupation. For having served one company for 33 years an office-worker breaks all records for steady employment. To an employee receiving $57.50 weekly falls the honour of obtaining the peak wage for clerical work.

A manufacturing concern in Vancouver paying $45 a week to one of its women workers leads all others in this respect. A Victoria employee who has worked for her present employer for 22 years without a break takes the lead for service in the industrial group.

Both top places in the personal service occupation belong in Vancouver, although not in the same firm. A weekly wage of $37 and a service record of 13 years win the coveted positions in this classification.

In the telephone and telegraph occupation Victoria and Vancouver share the honours. At the Capital City a telephone operator was reported as having been working for 23 years. A telegraphist in Vancouver receiving $37 weekly led all others in the matter of wages.

An employee in a Prince Rupert plant, who receives $28.75 a week and has been in her present position for 4 years, takes both records in the fishing industry.

The highest wage in the fruit and vegetable industry was earned by a Penticton employee whose pay-cheque for the week reported was $47. The longest term of service was given as 10½ years in a Kelowna packing plant.

Co-operation acknowledged.

Before concluding our report the members and officials of the Board desire to take this opportunity of expressing their gratitude to all who have co-operated with them in the administration of the Act. There was a more ready response to the request for the pay-roll returns than had been experienced in previous years. With few exceptions the employers have exhibited a readiness to comply with the provisions of the Orders, and every courtesy has been shown the Inspectors in the pursuit of their duties. Employees, too, are recognizing more clearly that the Act and Orders are for their benefit and protection, and less reluctance in reporting alleged or real infractions is exhibited. To the general public, who by attendance at conferences or practical interest in the Board's activities shown in other ways, the members now express their grateful thanks.

We have the honour to be,
Sir,
Your obedient servants,

J. D. McNiven, *Chairman.*
Helen Gregory MacGill.
Thomas Mathews.

APPENDIX.

SUMMARY OF ORDERS.

For convenient reference a summary of the Orders now in force is herewith appended:—

MERCANTILE INDUSTRY.

This includes all establishments operated for the purpose of trade in the purchase or sale of any goods or merchandise; and includes the work of all female employees engaged therein on the sales force; the wrapping force; the auditing or check-inspection force; the shoppers' force in the mail-order department; the receiving, marking, and stock-room employees; sheet-music saleswomen; and those otherwise engaged in the sale, purchase, or distribution of any goods or merchandise.

Weekly Minimum Wage.

Experienced Workers.	Inexperienced Workers.	
	Under 18 Years of Age.	18 Years of Age or over.
$12.75. Hourly rate, 26 9/16 cents.	$ 7 50 for 1st 3 months. 8 00 „ 2nd 3 „ 8 50 „ 3rd 3 „ 9 00 „ 4th 3 „ 9 50 „ 5th 3 „ 10 00 „ 6th 3 „ 10 50 „ 7th 3 „ 11 50 „ 8th 3 „	$ 9 00 for 1st 3 months. 10 00 „ 2nd 3 „ 11 00 „ 3rd 3 „ 12 00 „ 4th 3 „ Licences required in this class.

Above rates are for a 48-hour week. Time worked in excess of 48 hours must be paid for at the hourly rate.

Order has been in force since February 24th, 1919.

LAUNDRY, CLEANING, AND DYEING INDUSTRIES.

Weekly Minimum Wage.

Experienced Workers.	Inexperienced Workers.	
	Under 18 Years of Age.	18 Years of Age or over.
$13.50. Hourly rate, 28 1/8 cents.	$ 8 00 for 1st 4 months. 8 50 „ 2nd 4 „ 9 00 „ 3rd 4 „ 10 00 „ 4th 4 „ 11 00 „ 5th 4 „ 12 00 „ 6th 4 „	$ 9 00 for 1st 4 months. 10 50 „ 2nd 4 „ 12 00 „ 3rd 4 „ Licences required in this class.

Above rates are based on a 48-hour week. Maximum working-period 48 hours, governed by "Factories Act."

Order has been in force since March 31st, 1919.

PUBLIC HOUSEKEEPING OCCUPATION.

This includes the work of waitresses, attendants, housekeepers, janitresses, cooks, and kitchen help in restaurants, hotels, tea-rooms, ice-cream parlours, light-lunch stands, and other places where food is cooked, prepared, and served for which a charge is made; and the work of chambermaids, in hotels, lodging-houses, and apartments where lodging is furnished, whether or not such establishments are operated independently or in connection with any other business; and the work of all female elevator operators.

Weekly Minimum Wage.

Experienced Workers.	Inexperienced Workers.	
	Under 18 Years of Age.	18 Years of Age or over.
$14. Hourly rate, 29 1/6 cents.	$12 00	$12 00

Above rates are for a 48-hour week. In emergency cases 52 hours may be worked. Time and one-half shall be paid for work in excess of 48 hours and up to 52 hours.

When lodging is furnished, not more than $3 a week may be deducted for such lodging.

When board or meals are furnished, not more than $5.25 may be deducted for a full week's board of 21 meals. A fraction of a week's board shall be computed upon a proportional basis.

As elevator operators are required by law to pass an examination before running elevators, no apprenticeship is permitted under the Minimum Wage Order.

Order has been in force since August 16th, 1919.

OFFICE OCCUPATION.

This includes the work of females employed as stenographers, book-keepers, typists, billing clerks, filing clerks, cashiers, cash-girls (not included in other Orders), checkers, invoicers, comptometer operators, auditors, attendants in physicians' and dentists' offices, and all kinds of clerical help.

Weekly Minimum Wage.

Experienced Workers.	Inexperienced Workers.	
	Under 18 Years of Age.	18 Years of Age or over.
$15. Monthly rate, $65. Hourly rate, 31¼ cents.	$11 00 for 1st 6 months. 12 00 „ 2nd 6 „ 13 00 „ 3rd 6 „ 14 00 „ 4th 6 „	$11 00 for 1st 3 months. 12 00 „ 2nd 3 „ 13 00 „ 3rd 3 „ 14 00 „ 4th 3 „ Licences required in this class.

Above rates are for a 48-hour week. Maximum weekly working-period prescribed by Order, 48 hours.

Order has been in force since August 16th, 1919.

PERSONAL SERVICE OCCUPATION.

This includes the work of females employed in manicuring, hairdressing, barbering, and other work of like nature, or employed as ushers in theatres, attendants at shooting-galleries and other public places of amusement, garages, and gasolene service stations, or as drivers of motor-cars and other vehicles.

Weekly Minimum Wage.

Experienced Workers.	Inexperienced Workers.	
	Under 18 Years of Age.	18 Years of Age or over.
$14.25. Hourly rate, 29$^{11}/_{16}$ cents.	$10 00 for 1st 6 months. 11 00 „ 2nd 6 „ 12 00 „ 3rd 6 „ 13 00 „ 4th 6 „	*$10 00 for 1st 3 months. 11 00 „ 2nd 3 „ 12 00 „ 3rd 3 „ 13 00 „ 4th 3 „ Licences required in this class.

* These rates for learners do not apply to attendants at shooting-galleries and other public places of amusement, garages, and gasolene service stations, or to drivers of motor-cars or other vehicles, from whom no apprenticeship is deemed necessary.

Above rates are for 48-hour week, which is maximum permitted.

Wages for Ushers.

Ushers in theatres, music-halls, concert-rooms, or the like, engaged after 6 p.m., on legal holidays, and for special matinees, are entitled to a wage of not less than 30 cents an hour, with a minimum payment of 75 cents.

Ushers working more than 18 hours a week, but not in excess of 36 hours, are entitled to not less than $10.80 a week. (Ushers in this category may be employed only between 1.30 p.m. and 11 p.m.)

Ushers working in excess of 36 hours a week up to 48 hours are entitled to not less than $14.25. No distinction is made for ushers under 18 and over 18 years of age. No apprenticeship considered necessary for ushers.

Order has been in force since September 15th, 1919.

FISHING INDUSTRY.

This includes the work of females engaged in the washing, preparing, preserving, drying, curing, smoking, packing, or otherwise adapting for sale or use, or for shipment, any kind of fish, except in the case of canned fish.

Weekly Minimum Wage.

Experienced Workers.	Inexperienced Workers.
$15.50. Hourly rate, 32 7/24 cents.	$12 75 for 1st 4 months. 13 75 „ 2nd 4 „ 14 75 „ 3rd 4 „ Licences required for inexperienced employees 18 years of age or over.

Order has been in force since February 28th, 1920.

TELEPHONE AND TELEGRAPH OCCUPATION.

This includes the work of all persons employed in connection with the operating of the various instruments, switchboards, and other mechanical appliances used in connection with telephony and telegraphy, and shall also include the work of all persons employed in the business or industry of the operation of telephone or telegraph systems who are not governed by any other Order of the Board.

Weekly Minimum Wage.

Experienced Workers.	Inexperienced Workers.
$15. Hourly rate, 31¼ cents.	$11 00 for 1st 3 months. 12 00 „ 2nd 3 „ 13 00 „ 3rd 3 „ Licences required for inexperienced employees 18 years of age or over.

Above rates are for a 48-hour week. Maximum hours permitted are 8 per day and 48 per week, except in cases of emergency, when 56 hours may be worked. Time and one-half is payable for hours in excess of 48. Every employee must have one full day off duty in every week.

Where telephone and telegraph employees are customarily on duty between the hours of 10 p.m. and 8 a.m., 10 hours on duty shall be construed as the equivalent of 8 hours of work in computing the number of hours of employment a week.

In cases where employees reside on the employer's premises, the employer shall not be prevented from making an arrangement with such employees to answer emergency calls between the hours of 10 p.m. and 8 a.m.

Order has been in force since April 5th, 1920.

FRUIT AND VEGETABLE INDUSTRY.

This includes the work of females engaged in canning, preserving, drying, packing, or otherwise adapting for sale or use, any kind of fruit or vegetable.

Weekly Minimum Wage.

Experienced Workers.	Inexperienced Workers.
$14.40. Hourly rate, 30 cents.	$11 00 for 1st 2 months. Licences required for inexperienced employees 18 years of age or over.

Above rates are for a 48-hour week. For work over 48 hours, but not in excess of 10 hours a day, wages shall be not less than 30 cents an hour for experienced workers, and for work in excess of 10 hours the rate shall be not less than 45 cents an hour.

For work over 8 hours, but not in excess of 10 hours a day, wages shall not be less than 23 cents an hour for inexperienced workers, and for work in excess of 10 hours the rate shall be not less than 35 cents an hour.

Order has been in force since November 2nd, 1926.

MANUFACTURING INDUSTRY.

This includes the work of females engaged in the making, preparing, altering, repairing, ornamenting, printing, finishing, packing, assembling the parts of, and adapting for use or sale any article or commodity, but excepting fish, fruit, and vegetable drying, canning, preserving, or packing.

Weekly Minimum Wage.

Experienced Workers.	Inexperienced Workers.		
	Schedule 1.	Schedule 2.	Schedule 3.
$14. Hourly rate, 29½ cents.	$ 8 00 for 1st 2 mos. 10 00 „ 2nd 2 „ 12 00 „ 3rd 2 „	$ 8 00 for 1st 4 mos. 10 00 „ 2nd 4 „ 12 00 „ 3rd 4 „	$ 7 00 for 1st 6 mos. 10 00 „ 2nd 6 „ 13 00 „ 3rd 6 „

Licences required for inexperienced workers 18 years of age or over.

Schedule 1 applies to establishments in which any of the following products are manufactured or adapted for use or sale: Tea, coffee, spices, essences, sauces, jelly-powders, baking-powders, molasses, sugar, syrups, honey, peanut butter, cream and milk products, butter, candy, confectionery, biscuits, macaroni, vermicelli, meats, soft drinks, yeast, cans, buttons, soap, paint, varnish, drug and toilet preparations, photographs, ink, seeds, brooms, whisks, pails, wash-boards, wooden boxes, clothes-pins, matches, explosives, munitions, gas-mantles, and window-shades.

Schedule 2 applies to establishments in which any of the following products are manufactured or adapted for use or sale: Cotton bags, envelopes, overalls, shirts, ladies' and children's wear, gloves, hats, caps, men's neckwear, water-proof clothing, tents, awnings, regalia, carpets, furniture, bedding, pillow-covers, loose covers, mattress-covers, draperies, casket furnishings, factory-made millinery, knitted goods, blankets, brushes, machine-made cigars, and dipped chocolates.

Schedule 3 applies to the following occupations, or to establishments in which any of the following products are manufactured or adapted for use or sale: Bookbinding, embossing, engraving, printing, dressmaking, men's and women's tailoring, ready-to-wear suits, paper boxes, jewellery, furs, leather goods, hand-made cigars, boots, shoes, and hand-made millinery.

Schedule 3 does not apply to regularly indentured apprentices whose indentures have been approved by the Minimum Wage Board.

The above rates are for a 48-hour week. No employee shall be employed more than 8 hours a day, nor more than 48 hours a week, except when permission has been granted under the provisions of the "Factories Act."

Order has been in force since November 20th, 1923.

ASSOCIATIONS OF EMPLOYERS.

In the preparation of the following list the intention has been to confine it to organizations which have direct connection with the employment of labour, and not to include any which are established purely for other business or social purposes. The list, which is numerically about equal to that of last year, has been carefully corrected at the last possible moment before going to press.

Box Manufacturers' Section, B.C. Division, Canadian Manufacturers' Association — Chairman, A. M. Sharpe, B.C. Box Co., Ltd., Vancouver; Secretary, Hugh Dalton, 402 Pender Street West, Vancouver.

B.C. Hotels' Association—President, Lloyd A. Manly; Vice-President, T. H. Whelan; 2nd Vice-President, M. G. Gordon; Treasurer, P. L. Simpson; Secretary, J. J. Walsh, 611 North West Building, 509 Richards Street, Vancouver.

B.C. Loggers' Association—Chairman of the Board of Directors, T. A. Lamb, Lamb Lumber Co., Ltd.; Vice-Chairman, Geo. Moore, Merrill & Ring Lumber Co., Ltd.; Secretary-Manager, R. V. Stuart, 921 Metropolitan Building, Vancouver. Officers are elected annually on January 15th.

B.C. Lumber & Shingle Manufacturers' Association—President, F. R. Pendleton, Straits Lumber Co., Red Gap; Secretary, R. H. H. Alexander, 917 Metropolitan Building, Vancouver. Officers elected annually on third Thursday in January.

Builders' Supply Section, C.M.A. (B.C. Division)—Chairman, A. J. Campbell, Hillside Sand and Gravel Co., Ltd., Vancouver; Secretary, Hugh Dalton, 701 Board of Trade Building, Vancouver.

Canadian Jewellers' Association (B.C. Section)—Hon. Presidents, O. B. Allan, Geo. E. Trorey, Thos. A. Lyttleton, Walter M. Gow, and R. M. Tod; President, Alex. Waters; Vice-President, Allan Gow Carruthers; Secretary-Treasurer, A. Fraser Reid, 1635 Napier Street, Vancouver. Executive (Local): Geo. E. Snider, W. J. Hawkins, Harold J. Baxter, A. J. Jacoby, and F. Hinchcliffe. Executive (District): J. W. Duncan, Victoria; J. Little, Victoria; Harold Thorneycroft, Nanaimo; J. Bulger, Prince Rupert; C. J. Whiten, Vernon; W. J. Kerr, Kamloops; A. Clausen, New Westminster.

Canadian Manufacturers' Association (B.C. Division); Provincial Headquarters, 701–7 Board of Trade Building, Vancouver—Chairman, Edwin Tomlin, B.C. Cement Co., Ltd., Victoria; Secretary, Hugh Dalton, Vancouver.

Canadian Manufacturers' Association (Victoria Branch), 1008 Broad Street, Victoria—Chairman, H. J. Pendray, British America Paint Co., Ltd., Victoria; Secretary, T. J. Goodlake, 1008 Broad Street, Victoria.

Canadian Storage & Transfermen's Association—President, C. F. B. Tippet, 321 King Street East, Toronto, Ont. (The Howell Warehouses, Ltd.); Secretary, E. A. Quigley, Suite 10, 423 Hamilton Street, Vancouver. This Association has Board of Directors of each Province.

Canned Salmon Section, B.C. Division, Canadian Manufacturers' Association—Chairman, J. S. Eckman, Canadian Fishing Co., Ltd., Vancouver; Vice-Chairman, C. Thomas, B. C. Fishing & Packing Co., Ltd., Vancouver; Secretary, Hugh Dalton, 402 Pender Street West, Vancouver; Assistant Secretary of Section, R. E. Lanning, 705 Board of Trade Building, Vancouver.

Clay Products Section, B.C. Division, Canadian Manufacturers' Association—Chairman, James Parfitt, Victoria Brick Co., Victoria; Secretary, T. J. Goodlake, 1008 Broad Street, Victoria.

Confectioners' Section, Canadian Manufacturers' Association (B.C. Division)—Chairman, L. H. Nicholson, National Biscuit & Confection Co., Ltd., Vancouver; Secretary, Hugh Dalton, 701 Board of Trade Building, Vancouver.

Consolidated Shingle Mills of B.C., Ltd., 907–8 Metropolitan Building, Vancouver—Chairman, C. E. Merritt; Secretary, E. Bevan.

Fishing Vessel Owners' Association, Inc.—President, L. A. Sandstrom, Pier 8, Seattle, Wash.; Secretary, Capt. A. Langnes, Pier 8, Seattle, Wash.

Garment Manufacturers' Section, C.M.A. (B.C. Division)—Chairman, T. S. Dixon, Gault Bros., Ltd., Vancouver; Secretary, R. V. Robinson, 701 Board of Trade Building, Vancouver.

General Cartage & Storage Association of B.C.—President, Fred. Crone, Crone Storage Co., Ltd., 760 Beatty Street, Vancouver; Secretary, E. A. Quigley, Suite 10, Canadian Bank of Commerce Chambers, 423 Hamilton Street, Vancouver.

General Contractors' Association—President, J. F. Keen; 1st Vice-President, J. Tucker; Secretary, W. G. Welsford, 300 Pender Street West, Vancouver.

Jam Manufacturers' Section, B.C. Division, Canadian Manufacturers' Association—Chairman, C. D. Hunter, Empress Manufacturing Co., Ltd., Vancouver; Vice-Chairman, H. C. Wade, Dominion Canners, B.C., Ltd., Vancouver; Secretary, Hugh Dalton, 402 Pender Street West, Vancouver.

Master Sheet Metal Workers' Section, Canadian Manufacturers' Association (B.C. Division)—Chairman, Wm. G. Humphrey, Vancouver; Secretary, R. V. Robinson, 701 Board of Trade Building, Vancouver.

Metal Trades Section, C.M.A. (B.C. Division)—Chairman, W. I. Reid, Westminster Iron Works, Ltd., New Westminster; 1st Vice-Chairman, D. A. McIntosh, Letson & Burpee, Ltd., Vancouver; 2nd Vice-Chairman, A. Cairns, Vulcan Iron Works, Ltd., Vancouver; Treasurer, J. Latta, Murray-Latta Machine Works, Ltd., Vancouver; Secretary, H. Dalton, 701 Board of Trade Building, Vancouver.

Metal Trades Section, Victoria Branch, Canadian Manufacturers' Association—Chairman, E. W. Izard, Yarrows, Ltd., Esquimalt; Secretary, T. J. Goodlake, 1008 Broad Street, Victoria.

Millwork Section, Canadian Manufacturers' Association (B.C. Division)—Chairman, T. Gadd, Cedar Cove Sash & Door Co., Ltd., Vancouver; Manager, O. Phillips, 717 Board of Trade Building, Vancouver.

Mining Association of British Columbia—President, Chas. A. Banks, Pacific Building, Vancouver; Secretary, H. Mortimer-Lamb, Birks Building, Vancouver.

Mining Association of Interior British Columbia—President, J. P. MacFadden, New Denver; Secretary, W. H. Burgess, Kaslo.

Mountain Lumber Manufacturers' Association—President, W. K. Nichols, Giscome, B.C.; Vice-President, H. P. Klinestiner, Lumberton; Secretary-Treasurer, I. R. Poole, 204 Trades Building, Calgary, Alta. Officers elected at annual meeting held in January.

Northern B.C. Lumbermen's Association—President, Geo. W. Nickerson, Prince Rupert; Secretary-Treasurer, A. Brooksbank, Prince Rupert.

Printers' Section, B.C. Division, Canadian Manufacturers' Association—Chairman, Chas. Chapman, Murphy & Chapman, Ltd., Vancouver; Secretary, Hugh Dalton, 402 Pender Street West, Vancouver; Manager, R. L. Norman, 706 Board of Trade Building, Vancouver.

Printers' Section, Victoria Branch, Canadian Manufacturers' Association—Chairman, A. F. Stevens, Acme Press, Ltd., Victoria; Secretary, T. J. Goodlake, 1008 Broad Street, Victoria.

Retail Merchants' Association of Canada, Inc., B.C. Board—President, James Harkness, Vancouver; 1st Vice-President, R. T. Wilson, Nanaimo; 2nd Vice-President, J. F. Scott, Cranbrook; 3rd Vice-President, T. J. Wilcox, Kamloops; Treasurer, Wm. Kerr, New Westminster; Dominion Representative, D. H. Kent, Vancouver; Secretary, Cyril Dallas, Vancouver. Head Provincial Office at 420 Pacific Building, Vancouver. Branches are established at Armstrong, Cranbrook, Lytton, Nanaimo, Nelson, Revelstoke, and Vancouver. At New Westminster there is a District Branch serving the principal towns of the Lower Fraser Valley.

Shingle Manufacturers' Association of B.C.—President, C. E. Merritt, Huntting-Merritt Lumber Co., Ltd.; Vice-President, C. J. Culter, Westminster Mills, Ltd.; Secretary-Manager, E. Bevan, 907–8 Metropolitan Building, Vancouver. Meets for election of officers in January each year.

Shipping Federation of B.C., Inc.—Manager and Secretary, Major W. C. D. Crombie, Orange Hall, 341 Gore Avenue, Vancouver; President, Major R. G. Parkhurst, Vancouver; 1st Vice-President, F. H. Clendenning, Vancouver; 2nd Vice-President, K. J. Burns, Vancouver; Executive, K. A. McLennan, E. Beetham, B. C. Kelley, W. M. Crawford, David Baird, B. W. Greer, D. M. Cameron, J. C. Irons, L. B. Jepson, and John McLeod. Meets for election of officers in January each year.

Shipyards' Section, C.M.A. (B.C. Division)—Chairman, A. Bennett, Vancouver Shipyards, Ltd., Vancouver; Secretary, R. V. Robinson, 701 Board of Trade Building, Vancouver.

Timber Industries Council of B.C.—President, J. D. McCormack, Canadian Western Lumber Co., Ltd.; Managing Director, W. MacNeill, 911 Metropolitan Building, Vancouver.

Vancouver Association of Electragists—President, C. H. E. Williams, 509 Richards Street, Vancouver; Hon. Secretary, J. C. Reston, 579 Howe Street, Vancouver; Office, 425 Pacific Building. Officers elected annually in September.

Vancouver Association of Sanitary & Heating Engineers—President, W. Moscrop, 861 Seymour Street, Vancouver; Secretary, Robert G. Hargreaves, 425 Pacific Building, Vancouver. Officers elected annually in June.

Victoria Bread & Cake Manufacturers' Association—President, D. W. Hanbury, Golden West Bakery; Secretary, Capt. T. J. Goodlake, 1008 Broad Street. Election of officers annually in January.

Victoria Builders' Exchange—President, William Luney, 508 Sayward Building; Secretary, J. W. Bolden, 2509 Prior Street. Officers elected annually in January.

UNION DIRECTORY.

In our endeavour to present an up-to-date directory of trade-union organizations and their officials we have been greatly assisted by union secretaries and others, to whom our grateful acknowledgments are tendered. The number of such organizations in the Province does not show any material difference as compared with last year's, a few local organizations having gone out of existence and others having been initiated. The Department will appreciate any intimation of changes in the list which may be made from time to time.

TRADES AND LABOUR CONGRESS OF CANADA.

President, Thomas Moore, Ottawa. Vice-Presidents, J. T. Foster, Montreal; Jas. Simpson, Toronto; R. J. Tallon, Calgary. Secretary-Treasurer, P. M. Draper, Hope Building, Ottawa.

B.C. EXECUTIVE OF TRADES & LABOUR CONGRESS OF CANADA.

Chairman, Percy R. Bengough, Room 803, 16 Hastings Street East, Vancouver; Secretary, R. W. Nunn, 238 Queens Avenue, Victoria.

NATIONAL ORGANIZATIONS.

Canadian Merchant Service Guild.

Vancouver—President, Capt. Thomas Rippon, 675 Dunsmuir Street, Vancouver; Secretary, A. Goodlad, 675 Dunsmuir Street, Vancouver. Meets at Imperial Bank Chambers on 9th and 24th of each month.

Victoria—Secretary, Capt. T. H. Brown, 408 Union Building, Victoria.

Radio Division, No. 3, of the Electrical Communication Workers of Canada—Secretary, C. T. Foote, c/o Canadian Marconi Co., 500 Beatty Street, Vancouver. Meets in Hotel Vancouver at call of the Chair.

TRADES AND LABOUR COUNCILS.

Prince Rupert—President, S. D. McDonald, P.O. Box 268, Prince Rupert; Secretary, F. Derry, Box 498, Prince Rupert. Meets at Carpenters' Hall on second and fourth Tuesdays of each month.

Vancouver, New Westminster and District—President, James Thompson, 122 Hastings Street West, Vancouver; Secretary, P. R. Bengough, 803 Holden Building, Vancouver. Meets first and third Tuesdays of each month on second floor, Holden Building, at 8 p.m.

Vancouver Building Trades Council—President, R. S. Stevenson, 5023 Chester Street, Vancouver; Secretary, W. Page, 815 Holden Building, Vancouver.

Victoria—Corresponding Secretary, E. S. Woodward, 1325 Carlin Street. Meets at 8 p.m. on first and third Wednesdays in month at Trades Hall, Broad Street.

Federated Trades Councils (Railroads).

Victoria (Esquimalt & Nanaimo Railway Employees' Federation)—President, Geo. Philbrook, 637 King's Road, Victoria; Secretary, J. Booth, 2421 Mowat Street, Victoria. Meets in Room 4, Green Block, Victoria, at 7.30 p.m. on first Monday in month.

DISTRICT LODGES AND COUNCILS.

United Brotherhood of Carpenters and Joiners.

District Council of Vancouver—President, A. McDonald, 25 Hastings Street East, Vancouver; Secretary, W. Page, 809 Holden Building, Vancouver.

Electrical Communication Workers of Canada.

British Columbia District Council No. 1—President, W. T. Burford, 4144 Fourteenth Avenue West, Vancouver; Secretary, C. T. Foote, 745 Yates Street, Victoria. Meets in Room 132, Hotel Vancouver, first Sunday in the month at 11 a.m.

International Association of Machinists.

Vancouver District Lodge No. 78—President, Bert Oliver, 807 Holden Building, Vancouver; Secretary, A. W. Tait, 1865 Tenth Avenue West. Meets on first Wednesday of each month at 807 Holden Building, Vancouver, at 8 p.m.

Allied Printing Trades Council.

Vancouver—President, R. H. Neelands, 804 Holden Building, Vancouver; Secretary, Thomas Carroll, 804 Holden Building, Vancouver. Meets at 804 Holden Building, Vancouver, at 5 p.m. on second Monday in month.

Victoria—President, Joseph A. Wiley, 141 Clarence Street, Victoria; Secretary, T. A. Burgess, Box 1183, Victoria. Meets at Room 511, B.C. Permanent Loan Building, at 8 p.m. on last Thursday in month.

British Columbia Federation of Civic and Municipal Employees.

President, W. J. Scribbens, 3208 Pender Street East, Vancouver; Secretary, H. R. Simmers, 3675 Fifteenth Avenue West, Vancouver.

Civic Employees' Federation.

Vancouver—President, A. Watson, 1329 Thirteenth Avenue East, Vancouver; Secretary, H. A. Urquhart, 2015 Fourteenth Avenue West, Vancouver. Meets at call of the President.

Theatrical Federation of Vancouver.

President, Geo. Gerrard, 991 Nelson Street, Vancouver; Secretary, Will. Edmunds, 991 Nelson Street, Vancouver. Meets at 991 Nelson Street at 10 a.m. on Tuesday before first Sunday in month.

TRADE UNIONS.

Ashcroft.

Maintenance-of-way Employees & Railway Shop Labourers, No. 210—President, J. D. Nicol, Savona; Secretary, R. Halliday, Box 8, Spences Bridge. Meets at Ashcroft at 7.30 p.m. third Saturday in month.

Burnaby.

Civic Employees' Union, No. 23—Secretary, Chas. B. Brown, 2195 Linden Avenue, New Westminster.

Central Park.

Carpenters & Joiners (Amalgamated), No. 2605—President, F. Williams, 2469 Twenty-ninth Avenue East, Vancouver; Secretary, J. Muirhead, 2572 Monmouth Avenue, South Vancouver.

Cranbrook.

Brewery, Flour, Cereal & Soft Drink Workers, No. 308—Secretary, A. Mueller, c/o Cranbrook Brewing Co., Cranbrook.

Locomotive Firemen & Enginemen, Brotherhood of, Local No. 559—President, R. Bartholomew, Cranbrook; Secretary, M. H. Johns, Box 214, Cranbrook. Meets at 2.30 p.m. on first and third Sundays in month at Cranbrook.

Locomotive Engineers, Brotherhood of, Local No. 563—President, Hugh J. Brook, Box 551, Cranbrook; Secretary, A. S. Saunders, Cranbrook. Meets at 8 p.m. on second and fourth Mondays in Maple Hall.

Machinists, International, No. 588—President, W. Henderson, Box 827, Cranbrook; Secretary, R. J. Lawrie, Box 291, Cranbrook. Meets at residence of Secretary on first Sunday each month at 4.30 p.m.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 229—President, John Flynn, Cranbrook; Secretary, G. C. Brown, Cranbrook. Meets at Cranbrook at call of Secretary.

Railway Conductors of America, Order of, Local No. 407—President, E. Williams, Cranbrook; Secretary, Joe Jackson, Cranbrook. Meets at K. of P. Hall, Cranbrook, on second Sunday in month at 2.30 p.m.

Railway Carmen of America, Brotherhood of, Local No. 173—President, W. Hewson, French Avenue, Cranbrook; Secretary, J. F. Lunn, 200 Durick Avenue, Cranbrook. Meets at 8 p.m. at I.O.O.F. Hall, Norbury Avenue, on first Wednesday in month.

Railway & Steamship Clerks, Freight Handlers, Express & Station Employees, No. 1292—President, H. H. Linnell, Cranbrook; Secretary, E. G. Dingley, Box 728, Cranbrook. Meets in Auditorium, Cranbrook, on second and fourth Sundays in month at 3 p.m.

Railway Trainmen, Brotherhood of, Local 585—President, P. C. Hartnell, Box 865, Cranbrook; Secretary, H. B. Haslam, Box 784, Cranbrook. Meets at Maple Hall every Sunday at 7.30 p.m.

Corbin.

Corbin Miners' Association—President, Thomas Haigh, Corbin; Secretary-Treasurer, William Almond, Corbin. Meets in Miners' Union Hall on alternate Sundays at 7 p.m.

Duncan.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 533—Secretary, H. W. McKenzie, Box 356, Duncan.

Essondale.

Mental Hospital Attendants' Union, No. 35 (T. & L.C.)—President, J. A. Gibson; Secretary, J. McD. Nicholson, Essondale.

Fernie.

Brewery, Flour, Cereal & Soft Drink Workers of America, International Union of, Local No. 308—President, J. W. Gladney, McPherson Avenue; Secretary, J. E. Robson, Box 1071, Fernie. Meets at 96 Howland Avenue, Fernie, on first Monday of each month at 7.30 p.m.

Miners' Association (Independent), British Columbia—President, Matthew Tully, Fernie; Secretary, W. A. Harrison, Box 568, Fernie.

Field.

Railway Carmen of America, No. 1454—Secretary, Thomas Barlow, Box 158, Field.

Golden.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 165—Secretary, C. Erickson, Box 126, Field. Meets at Golden on the last Sunday of each quarter at 10 a.m.

Kamloops.

Locomotive Engineers, Brotherhood of, Division No. 821—President, A. Kenwood, Kamloops; Secretary, T. J. O'Neill, Box 753, Kamloops. Meets at Orange Hall on first and third Thursdays in month at 2.30 p.m.

Locomotive Engineers, Brotherhood of, Division No. 855—Secretary, J. Patterson, Box 201, Kamloops. Meets first and third Sundays at Orange Hall, Kamloops, at 2.30 p.m.

Locomotive Firemen & Enginemen, Brotherhood of, Local No. 258—President, H. C. Embree, Kamloops; Secretary, J. H. Worsley, Nicola Street, Kamloops. Meets at Orange Hall, Kamloops, at 2.30 p.m. on first and third Tuesdays in month.

Maintenance-of-way Employees, Brotherhood of, Lodge No. 15—President, H. Williamson, Wolfenden; Secertary, Noel Montagnon, Vavenby. Meets in Kamloops on first Sunday in January, April, July, and October at 1 p.m.

Railroad Employees, No. 161—President, J. E. Fitzwater, Kamloops; Secretary, N. Papworth, Kamloops.

Railway Carmen, Brotherhood of, Local No. 148—President, O. E. Klemmer, North Kamloops; Secretary, J. F. Corbett, 977 St. Paul Street, Kamloops. Meets every second Tuesday at 7.30 p.m. in the Orange Hall, Kamloops.

Railway Conductors of America, Order of, Division No. 611—Chief Conductor, S. W. Bent, Kamloops; Secretary, A. G. Corry, Box 177, Kamloops. Meets at Orange Hall, Kamloops, on second and fourth Sundays in month at 2 p.m.

Railway Enginemen, Canadian Association of—Secretary, W. Dohm, Kamloops.

Railway Trainmen, Brotherhood of, Local No. 519—Secretary, V. A. Mott, Kamloops. Meets at Orange Hall, Kamloops, on second Sunday and fourth Tuesday in month at 7 p.m.

Kitchener.

Maintenance-of-way Employees & Railway Shop Labourers, No. 229—Secretary, Geo. C. Brown, Box 739, Cranbrook.

Lytton.

Maintenance-of-way Employees, Brotherhood of, No. 210—President, J. D. Nicol, Savona; Secretary, R. Halliday, Box 8, Spences Bridge.

Matsqui.

Maintenance-of-way Employees, No. 31—President, P. E. Crick, Kamloops Junction; Secretary, F. Kent, Box A, Lytton. Meets at C.N.R. Freight Office Building, Vancouver, at 11 a.m. on first Sunday in March, June, September, and December.

Michel.

B.C. Miners' Association—President, James Walsh, Natal; Secretary, Simeon Weaver, Natal. Meets every second Friday at 7 p.m. in the Michel Hall and the Natal Club Hall alternately.

Mission City.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 168—President, F. W. Brunton, Hatzic P.O.; Secretary, H. Anderson, Harrison Mills. Meets at Vancouver on third Sunday in January, April, July, and October at 10.30 a.m.

Nanaimo.

Letter Carriers, Federated Association of, No. 54—Secretary, W. H. McMillan, 410 Bruce Avenue, Nanaimo. Meets at 7.30 p.m. on first Tuesday of month.

Typographical Union, International, Local No. 337—President, R. J. Stewart, c/o Free Press Block, Nanaimo; Secretary, L. C. Gilbert, Box 166, Nanaimo. Meets at call of President.

Nelson.

Barbers' International Union, Journeymen, Local No. 196—President, Eli Sutcliffe, Nelson; Secretary, H. Hughes, P.O. Box 465, Nelson. Meets at 417 Hall Street, Nelson, at 8 p.m. on last Thursday in month.

Dominion Express Employees, No. 18, Brotherhood of—Secretary, L. S. McKinnon, 212 Baker Street, Nelson.

Locomotive Engineers, Brotherhood of, Division No. 579—President, J. Simons, 203 Silica Street, Nelson; Secretary, E. Jeffcott, 610 Mill Street, Nelson. Meets at Recreation Club, Nelson, on Sundays at 10.30 a.m.

Locomotive Firemen & Enginemen, Brotherhood of, Division No. 631—President, Chas. W. Munro, Nelson; Secretary, Stanley Smith, Nelson. Meets second and fourth Sundays at 2 p.m. in I.O.O.F. Hall.

Machinists, International Association of, Local No. 663—President-Secretary, Fred. Chapman, Box 253, Nelson.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 181—President, Albert Olson, West Grand Forks; Secretary, F. Gustafson, Box 265, Nelson. Meets last Sunday in March, June, September, and December at 2 p.m. at Nelson.

Railway Carmen of America, Brotherhood of, Local No. 98—President, H. Korlak, General Delivery, Nelson; Secretary, J. Shardelow, Box 765, Nelson. Meets in Canadian Legion, Nelson, at 7.30 p.m. on second Thursday in month.

Railway Conductors of America, Order of, Division No. 460—Chief Conductor, A. B. Hall, 915 Stanley Street, Nelson; Secretary, H. L. Genest, Box 216, Nelson. Meets in K. of P. Hall at 1.30 p.m. on second Sunday in month.

Railway & Steamship Clerks, Freight Handlers, Express & Station Employees, No. 1291—President, P. Craven, General Delivery, Nelson; Secretary, A. T. Richards, Box 701, Nelson. Meets in Nelson on first Thursday of each month at 8.30 p.m.

Railway Trainmen, Brotherhood of, Local No. 558—President, P. Jeffrey, 120 Mines Road, Nelson; Secretary, A. Kirby, 820 Carbonate Street, Nelson. Meets at Community Building, cor. Stanley and Victoria Streets, at 1.30 p.m. on second Sunday in month.

Typographical Union, International, Local No. 340—President, Joseph Clinton, Box 766, Nelson; Secretary, L. E. Pascoe, Box 935, Nelson. Meets in Daily News Office, Nelson, at 5.10 p.m. on last Wednesday in month.

New Denver.

Mine, Mill & Smelter Workers, No. 98—Secretary, A. Shilland, New Denver.

New Westminster.

Barbers' International Union, Journeymen, Local No. 573—President, C. Moir, New Westminster; Secretary, Geo. Yorkstown, 35 Eighth Street, New Westminster. Meets at 35 Eighth Street on fourth Thursday in month at 7 p.m.

Boilermakers, Iron Shipbuilders and Helpers, International Brotherhood of, No. 466—Secretary, J. F. Lower, 519 Tenth Street, New Westminster.

Carpenters & Joiners of America, United Brotherhood of, Local No. 1251—President, John Saunders, 628 Eighth Avenue, New Westminster; Recording Secretary, A. E. Corbett, Labour Temple, New Westminster. Meets at Labour Temple on first Thursday in month at 8 p.m.

Civic Employees of New Westminster, Union of—Secretary, Rees Morgan, 313 Regina Street, New Westminster. Meets in Labour Temple at 8 p.m. on first Tuesday in month.

Civil Servants of Canada (Amalgamated)—President, H. G. Cox, Box 40, New Westminster; Secretary, F. McGrath, 316 Strand Avenue, New Westminster. Meets at Dominion Building on third Monday in month at 8 p.m.

Fire Fighters, International Association of, No. 256—President, Wm. Mathew, 910 London Street, New Westminster; Secretary, H. Nevard, 1101 London Street, New Westminster. Meets at No. 1 Fire Hall (no set day) during first week of month at 8 p.m.

Fishermen's Protective Association of B.C.—President, L. Patterson, New Westminster;

Secretary, W. E. Maiden, Box 717, New Westminster. Meets at Trapp Block, New Westminster, at 3.30 p.m. on first Saturday of each month.

Longshoremen's Association No. 1, New Westminster and District, Independent—President, R. Butters, 608 Eighth Avenue, New Westminster; Secretary, W. Clitheroe, 124 Fourteenth Avenue East, New Westminster.

Machinists, International Association of, Local No. 151—President, F. Sinnett, 4019 Kingsway; Secretary, D. MacDonald, 360 Sherbrooke Street, New Westminster. Meets in Labour Temple on first Friday in each month at 8 p.m.

Musicians, American Federation of (Musicians' Mutual Protective Association), Local No. 654—President, F. Staton, 906 Tenth Street, New Westminster; Secretary, F. C. Bass, Box 115, New Westminster. Meets in Labour Temple at 2.30 p.m. on fourth Sunday in month.

Plumbers and Steamfitters, United Association of, No. 571—President, C. Porter, 3406 Imperial Street, New Westminster; Secretary, Lloyd Elrick, Port Mann.

Railway Carmen of America, Brotherhood of, Local No. 280—President, J. Huggan, 529 Ninth Street, New Westminster; Secretary, M. Sorley, 1556 Fourth Street, New Westminster. Meets at Independent Labour Party's Headquarters, New Westminster, on third Friday in month at 8 p.m.

Retail Clerks' International Protective Association, No. 1306—President, W. W. Callander, 321 Pine Street; Secretary, J. Ellis, 719 Thirteenth Street, New Westminster. Meets last Thursday in month in Hart Block at 8 p.m.

Street & Electric Railway Employees of America, Amalgamated Association of, Division No. 134—President, Herbert Bell, 1551 Inverness Street, New Westminster; Secretary, A. J. Bond, 519 Fourteenth Street, New Westminster. Meets in Labour Temple at 7 p.m. on second and fourth Tuesdays in month.

Typographical Union, International, Local No. 632—President, A. R. MacDonald, Box 1024, New Westminster; Secretary, R. A. Stoney, Box 1024, New Westminster. Meets in Labour Temple at 8 p.m. on last Friday in month.

Notch Hill.

Maintenance-of-way Employees & Railway Shop Labourers, No. 193—President, W. Annala, Tappen; Secretary, W. Loftus, Notch Hill.

Penticton.

Locomotive Engineers, No. 866—President, C. E. Hulett, Penticton; Secretary, C. Cornock, Box 64, Penticton. Meets at Burtch's Hall, Penticton, on second and fourth Sundays of each month at 3 p.m.

Locomotive Firemen & Enginemen, Brotherhood of, Local No. 884—President, C. A. Tupper, Penticton; Secretary, R. O. Blackstock, Box 385, Penticton. Meets at Penticton on first and fourth Thursdays of month at 2 p.m.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 1023—President, James Slatter, General Delivery, Penticton; Secretary, R. A. Eckersley, R.R. No. 1, Summerland. Meets in Penticton at 1 p.m. on second Sunday of every second month.

Railway Carmen of America, Brotherhood of, No. 1426—President, H. Suckling, Box 322, Penticton; Secretary, T. Bradley, Penticton. Meets on first Monday in month at 8 p.m.

Railroad Trainmen, Brotherhood of, Local No. 914—President, Herbert Nicolson, Penticton; Secretary, W. B. McCallum, Penticton. Meets at K. of P. Hall, Penticton, on first and third Sundays of each month at 2.30 p.m.

Point Grey.

Fire Fighters' International Association, No. 260—President, C. C. Maddison, No. 1 Fire Hall, Kerrisdale; Secretary, H. Foulkes, 1395 Sixty-fourth Avenue West, Kerrisdale. Meets at 319 Pender Street West, Vancouver, on first Thursday of each month at 10 a.m.

Port Alberni.

Longshoremen's Club (unchartered)—Secretary, W. G. Bigmore, Port Alberni.

Prince George.

Locomotive Engineers, Brotherhood of, Division No. 843—President, W. Kemp, Prince George; Secretary, M. O'Rourke, Box 124, Prince George. Meets in Odd Fellows' Hall on second and fourth Mondays of each month at 2 p.m.

Locomotive Firemen & Enginemen, Brotherhood of, Mount Robson Lodge, No. 827—President, E. J. Rice, Prince George; Secretary, C. H. Olds, Box 129, Prince George. Meets in I.O.O.F. Hall at 2 p.m. on first and third Sundays in the month.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Nechako Lodge, No. 1870—President, W. Cullen, Longworth P.O.; Secretary, T. Nielsen, Box 162, Prince George. Meets alternately at Endako and Prince George about every six weeks; date set at each meeting.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 202—President, C. M. Leclair, Snowshoe; Secretary, F. Swanson, Hutton Mills. Meets at McBride and Prince George about end of each quarter.

Railroad Employees, Local No. 28—President, F. C. Saunders, Prince George; Secretary, H. A. MacLeod, Prince George. Meets at Tenth Avenue, Prince George, on first Sunday in month.

Railway Conductors of America, Order of, Local No. 620—Chief Conductor, J. G. Sweeney, Prince George; Secretary, J. E. Paschall, Box 305, Prince George. Meets in Prince George on second and fourth Sundays in month at 8 p.m.

Prince Rupert.

Carpenters & Joiners of America, United Brotherhood of, Local No. 1735—President, J. J. Gillis, Box 694; Secretary, J. S. Black, Box 694, Prince Rupert. Meets in Carpenters' Hall at 8 p.m. on first and third Wednesdays of each month.

Deep Sea Fishermen's Union of the Pacific—Secretary-Treasurer, P. B. Gill, Box 65, Seattle. Meets at 84 Seneca Street, Seattle, also at

Prince Rupert and Ketchican on Tuesdays at 7.30 p.m.

Electrical Workers, International Brotherhood of, Local No. 344—President, A. McRae, Box 457, Prince Rupert; Secretary, S. Massey, Box 457, Prince Rupert. Meets in Carpenters' Hall at 8 p.m. on first Monday of each month.

Longshoremen's Association, No. 2, Canadian Federation of Labour—President, Sydney V. Cox, 638 Sixth Avenue, Prince Rupert; Secretary, Wm. T. Pilford, Prince Rupert. Meets in Longshoremen's Hall on Monday of each week at 8 p.m.

Machinists, International Association of, Local No. 207—President, F. R. Rogers, General Delivery, Prince Rupert; Secretary, J. Campbell, Box 469, Prince Rupert. Meets in Carpenters' Hall at 8 p.m. on second Wednesday in month.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 335—President, J. E. McDonald, Caspaco; Secretary, T. G. McManaman, c/o C.N. Railway, Kwinitsa. Meets alternately at Usk and Prince Rupert at call of President and Secretary.

Plumbers & Steamfitters of the United States and Canada, United Association of, Local No. 495—President, R. Wilson, Box 209, Prince Rupert; Secretary, W. M. Brown, Box 209, Prince Rupert. Meets in Carpenters' Hall at 8 p.m. on first Monday in the month.

Railway Carmen of America, Brotherhood of, Local No. 426—President, R. M. Tucker, Box 527, Prince Rupert; Secretary, E. Tulloch, Box 213, Prince Rupert. Meets in Carpenters' Hall, Eighth Street, Prince Rupert, at 8 p.m. on second Monday of each month.

Railway Employees, Brotherhood of, Division No. 154—President, H. R. Hill, General Delivery, Prince Rupert; Secretary, L. A. Astoria, Box 32, Prince Rupert. Meets in Carpenters' Hall usually on the fourth Friday at 8.30 p.m.

Sheet Metal Workers, International Alliance, Local No. 672—President, J. W. Ratchford, Prince Rupert; Secretary, Geo. H. Dobb, 625 Tatlow Street, Prince Rupert. Meets in Trades and Labour Council Hall at 8 p.m. on fourth Monday in the month.

Steam & Operating Engineers, Local No. 510—President, P. J. McCormack, Prince Rupert; Secretary, B. R. Rice, 800 Eighth Avenue West, Prince Rupert (Box 892). Meets in Carpenters' Hall at 8 p.m. on first Friday of each month.

Typographical Union, International, Local No. 413—President, S. D. MacDonald, Box 689, Prince Rupert; Secretary, J. M. Campbell, Box 689, Prince Rupert. Meets in Carpenters' Hall at 3 p.m. on last Sunday of each month.

Revelstoke.

Blacksmiths, Drop Forgers & Helpers, International Brotherhood of, Local No. 407—President, Jas. Mathie, Revelstoke; Secretary, Jas. M. Goble, Box 283, Revelstoke. Meets in Selkirk Hall on the fourth Saturday of each month at 8 p.m.

Locomotive Engineers, Brotherhood of, Division 657—President, H. Carpenter, Third Street, Revelstoke; Secretary, J. P. Purvis, Box 27, Revelstoke. Meets in Selkirk Hall on first and third Tuesdays of each month at 2 p.m.

Locomotive Firemen & Enginemen, Brotherhood of, Local No. 341—President, W. L. Lea, Revelstoke; Secretary, G. P. Deptford, Revelstoke. Meets in Selkirk Hall, Revelstoke, on second and fourth Wednesdays of each month at 2.30 p.m.

Machinists, International Association of, Local No. 34—President, A. W. Bell, Box 209, Revelstoke; Secretary, Dugald Bell, Box 209, Revelstoke. Meets in Smyth's Hall at 8 p.m. on first Monday of month.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 208—President, W. Lesley, Revelstoke; Secretary, A. Blackberg, Revelstoke. Meets in Revelstoke at 2 p.m. on first Sunday of each month.

Railway Carmen of America, Brotherhood of, Local No. 481—President, A. Watt, Revelstoke; Secretary, H. Parsons, Box 42, Revelstoke. Meets in Smyth's Hall at 7.30 p.m. on third Tuesday of each month.

Railway Conductors of America, Order of, Mount Stephen Division, Local No. 487—President, E. R. Clay, Revelstoke; Secretary, W. W. Lynes, General Delivery, Revelstoke. Meets in Selkirk Hall on second Monday at 7.30 p.m. and fourth Thursday of each month at 2.30 p.m.

Railway Trainmen, Brotherhood of, Local No. 51—President, G. Forbes, Revelstoke; Secretary, W. Maxwell, Revelstoke. Meets at Revelstoke at 2 p.m. on first Sunday and at 8 p.m. on third Monday of each month.

Smithers.

Commercial Telegraphers' Union of America, No. 53—Chairman and Secretary, W. Mitchell, Smithers.

Locomotive Engineers, Brotherhood of, Local No. 111—Chief Engineer, H. D. Johnson, Smithers; Secretary, S. J. Mayer, Smithers. Meets at Smithers on first and third Tuesdays in month at 8 p.m.

Locomotive Firemen & Enginemen, Brotherhood of, No. 902—President, B. Ross, Smithers; Secretary, T. L. Stafford, Smithers.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 340—President, D. Matheson, Houston; Secretary, F. Simonds, Quick. Meets at Smithers.

Railroad Employees, Canadian Brotherhood of, No. 157—Secretary, Hugh Forrest, Smithers.

Railway Carmen of America, Brotherhood of, No. 1415 (Bulkley)—President, J. S. Cathroe, Smithers; Secretary, G. W. Smith, Smithers. Meets at Social Hall, Smithers, on first Thursday in month at 7 p.m.

Railway Trainmen, Brotherhood of, Farthest North Lodge, No. 869—President, A. Greenhalgh, Box 180, Smithers; Secretary, H. H. Oleson, Box 180, Smithers. Meets at Railwaymen's Hall, Smithers, on first and third Thursdays of each month at 8.30 p.m.

South Vancouver.

Civic Employees' Union—President, A. W. Richardson, 5775 Prince Edward Street, South Vancouver; Secretary, W. S. Welton, 832 Twenty-eighth Avenue East, South Vancouver. Meets at Municipal Hall, South Vancouver, on second Tuesday in month at 8 p.m.

Fire Fighters, International Association of, No. 259—President, G. Hearnden, 2625 Forty-ninth

Avenue East, Collingwood; Secretary, C. W. Goldsmith, 1126 Twenty-sixth Avenue East, South Vancouver. Meets at Municipal Hall, South Vancouver, at 8 p.m. on first Monday in month.

Squamish.

Railway Carmen of America, Brotherhood of, No. 1419—President, Alec. McDonald, Squamish; Secretary, J. E. Holmes, Squamish. Meets second Tuesday at 8 p.m. in the Presbyterian Hall, Squamish.

Steveston.

Fishermen's Benevolent Society (Japanese Independent)—Secretary, G. Takahashi, Steveston.

Stewart.

Mine, Mill & Smelter Workers' Union, International, Local No. 181—Secretary, W. Fraser, Stewart.

Three Forks.

Maintenance-of-way Employees, Brotherhood of, No. 173—Secretary, T. H. Horner, Kaslo. Meets second Sunday of each month at 2 p.m.

Trail.

Machinists, International Association of, Local No. 763—President, A. Balfour, Box 114, Trail; Secretary, T. Meachem, Box 74, Trail. Meets in Miners' Hall at call of Chair.

Vancouver.

Automobile Mechanics, Lodge No. 702, International Association of Machinists—Meets in Room 310, Holden Building, Vancouver, on second and fourth Tuesdays at 8 p.m.

Bakery & Confectionery Workers, Local No. 468—President, A. Morris, 2834 Vine Street, Vancouver; Secretary, Thos. Rigley, 37 Broadway West, Vancouver. Meets in Holden Building, 16 Hastings Street East, first Saturday of month at 8 p.m.

Bakery Drivers' Union, No. 464—President, T. R. Adams, 992 Nicola Street, Vancouver; Secretary, Birt. Showler, 1115 Robson Street, Vancouver. Meets in Holden Building on second Thursday of each month at 8 p.m.

Bakery Salesmen's International Union of America, Local No. 371—President, E. Holmes, 1217 Keefer Street, Vancouver; Secretary, H. A. Bowron, 744 Fifteenth Avenue East, Vancouver. Meets at Holden Building on second Thursday of each month at 8 p.m.

Barbers' International Union, Journeymen, Local No. 120—Secretary, C. E. Herrett, 814 Holden Building, Vancouver. Meets at 814 Holden Building at 8 p.m. on second and fourth Tuesdays in month.

Beverage Dispensers' Union, No. 676—President, W. H. Clancy, 1117 Tenth Avenue East, Vancouver; Secretary, T. J. Hanafin, 2376 Sixth Avenue West, Vancouver. Meets at 310 Pender Street West, Vancouver, at 8 p.m. on last Sunday in month.

Blacksmiths, Drop Forgers & Helpers, International Brotherhood of, Local No. 151—President, W. J. Bartlett, 1154 Howe Street; Secretary, A. Arman, 2048 Second Avenue West, Vancouver. Meets at 16 Hastings Street East at 8 p.m. on fourth Friday of each month.

Boilermakers, Iron Shipbuilders & Helpers, International Brotherhood of, Local No. 194—President, L. C. Campbell, 349 Fifth Street East, Vancouver; Secretary, A. Fraser, 5079 Ross Street, South Vancouver. Meets at Holden Building at 8 p.m. on first and third Mondays.

Bookbinders, International Brotherhood of, Local No. 105—President, Geo. Low, 63 Fifty-third Avenue West, Vancouver; Secretary, Thomas Carrall, 842 Hamilton Street, Vancouver. Meets at Business Women's Club, 601 Hastings Street West, Vancouver, on second Tuesday of each month at 8 p.m.

Boot and Shoe Workers' Union, Local No. 505—Secretary, I. G. Griffiths, 3622 McGill Street, Vancouver. Meets at 804 Holden Building at 8 p.m. on first Wednesday in month.

Brewery, Flour, Cereal & Soft Drink Workers of America, No. 300, International Union of the United—President, Angus McLennan, 6538 Culloden Street, Vancouver; Secretary, W. McLean, 2035 Broadway West, Vancouver.

Bricklayers, Masons & Tilesetters' International Union of America, Local Union No. 1, B.C.—Secretary, Wm. S. Dagnall, 1244 Twentieth Avenue East, Vancouver. Meets at 808 Holden Building, Vancouver, on second and fourth Wednesdays in month at 8 p.m.

Bridge & Structural Iron Workers, International Association of, Local No. 97—President, Sydney Dunstone, 1426 Napier Street, Vancouver; Secretary, Paul Lauret, 1839 Main Street, Vancouver. Meets at 611 Holden Building, 16 Hastings Street East, Vancouver, at 8 p.m. each Monday.

Canadian Pacific Express Employees, Brotherhood of, Local No. 15—President, C. G. Murray, 4330 Dumfries Street, Vancouver; Secretary, E. W. Lambert, 2241 Fourth Avenue East, Vancouver. Meets at 810 Holden Building on first Tuesday of each month at 8 p.m.

Carpenters of Canada, Amalgamated, Branch No. 1—President, Chas. S. Robertson, 2758 Second Avenue East, Vancouver; Secretary, J. T. Bruce, Room 35, 163 Hastings Street West, Vancouver. Meets at 163 Hastings Street West at 8 p.m. on second and fourth Tuesdays of each month.

Carpenters of Canada, Amalgamated, Branch No. 2—President, G. Findley 45 Forty-third Avenue West, Vancouver; Secretary, W. Bray, 72 Sixteenth Avenue West, Vancouver. Meets at Flack Building, 163 Hastings Street West, on first and third Tuesdays of month at 8 p.m.

Carpenters & Joiners, United Brotherhood of, Local No. 452—President, A. McDonald, 25 Hastings Street East, Vancouver; Secretary, W. Page, 809 Holden Building, Vancouver. Meets at Room 213, Holden Building, Vancouver, at 8 p.m. on second and fourth Mondays in month.

Carpenters & Joiners, United Brotherhood of (Floorlayers), No. 1875—President, E. C. Woodward, 1402 Fifth Avenue West, Vancouver; Secretary, A. Reid, 2339 Trafalgar Street, Vancouver.

Cigarmakers, International Union of America, Local No. 357—President, J. Halawell, 3939 Thirteenth Avenue West, Vancouver; Secretary, R. A. Shaw, 1022 Seymour Street, Vancouver. Meets at 804 Holden Building, Vancouver, at 8 p.m. on first Tuesday in month.

City Hall Employees' Association—President, D. Hargreaves, 562 Twelfth Avenue East, Vancouver; Secretary, J. Tarbuck, 2792 Pender Street East, Vancouver. Meets at 251½ Hastings Street East, Vancouver, at 8 p.m. on first Wednesday of each month.

Civic Employees' Federal, Local No. 28 (Chartered by Trades & Labour Congress of Canada)—Secretary, G. Harrison, 1182 Parker Street, Vancouver. Meets at 445 Richards Street, Vancouver, at 8 p.m. on first and third Fridays in month.

Civil Servants of Canada, Amalgamated—President, R. D. McMahon, North Lonsdale; Secretary, J. Linson, Patterson Road, Eburne.

Commercial Telegraphers' Union of America, C.P.R. System, Division No. 1—Secretary, G. L. Gauvreau, 1622 Thirty-eighth Avenue East, Vancouver. Meets at Room 132, Hotel Vancouver; no regular time set.

Commercial Telegraphers' Union of America, Local No. 52—Chairman, J. Clark, 738 Sherburn Street, Winnipeg; Secretary, J. A. McDougall, 1633 Twelfth Avenue East, Vancouver.

Electrical Workers, International Brotherhood of, Local No. 213—Secretary and Business Agent, E. H. Morrison, Room 111, 319 Pender Street West, Vancouver. Meets at 319 Pender Street West on Monday at 8 p.m.

Electrical Workers, International Brotherhood of, Local No. 310—President, J. Harkness, Fourteenth Avenue East, Vancouver; Secretary, F. Buckle, 2525 Wellington Street, Vancouver. Meets at 319 Pender Street West at 8 p.m. on Wednesdays.

Fire Fighters, No. 18, International Association of—President, J. Anderson, No. 2 Fire Hall; Financial Secretary, C. A. Watson, No. 3 Fire Hall, Vancouver. Meets at 251½ Hastings Street East, Vancouver, on second Thursday at 10 a.m. and third Thursday at 8 p.m.

Granite Cutters, International Association of—Secretary, James P. Simpson, 2856 Eaton Street, Vancouver. Meets on third Friday of month at Holden Building, 16 Hastings Street East, at 7.30 p.m.

Hod Carriers & Builders Labourers, International, Local No. 602—President, C. Lawson, 1832 Third Avenue West, Vancouver; Secretary, J. A. Barrington, 4293 Welwyn Street, South Vancouver. Meets in Holden Building, 16 Hastings Street East, first and third Fridays of each month at 7.30 p.m.

Jewellery Workers, International Union of, Local No. 42—President, Len. C. Simpson, 3492 Thirty-eighth Avenue West, Vancouver; Secretary, F. C. Yarrall, 1836 Alberni Street, Vancouver. Meets on first Friday in month at 8 p.m.

Lathers, Wood, Wire & Metal, International Union, Local No. 207—Secretary, Bert. Jenkins, 50 Forty-fifth Avenue West, Vancouver. Meets at Room 209, Holden Building, Vancouver, at 8 p.m. on second and fourth Mondays in month.

Lithographers of America, Amalgamated, Local No. 44—President, C. Addie, 217 Twenty-third Avenue, Vancouver; Secretary, J. Thompson, Vancouver. Meets at Room 804, Holden Building, Vancouver, at 8 p.m. on third Wednesday in month.

Locomotive Engineers, Brotherhood of, Kamloops, Division No. 320—President, G. P. Boston, 1763 Third Avenue West, Vancouver; Secretary, H. O. B. McDonald, 1222 Pendrell Street, Vancouver. Meets at I.O.O.F. Hall on second Tuesday in month at 8 p.m. and on fourth Tuesday in month at 2 p.m.

Locomotive Engineers, Brotherhood of, No. 907—Chief Engineer, J. H. Jones, 1847 Kitchener Street, Vancouver; Secretary, T. Retallack, 1749 Seventh Avenue East, Vancouver.

Locomotive Firemen & Enginemen, Local No. 656—President, T. McEwan, 350 Fourteenth Avenue East, Vancouver; Secretary, S. H. Waterhouse, 1643 Thirteenth Avenue East, Vancouver. Meets at I.O.O.F. Hall on first Thursday of each month at 8 p.m. and third Thursday at 2 p.m.

Lumber Handlers' Association (Independent)—Business Agent, Jas. Greer, 696 Powell Street, Vancouver. Meets second Thursday of the month at 8 p.m. at 696 Powell Street, Vancouver.

Lumber Workers' Association, Canadian (C.F. of L.)—Secretary, D. H. Marr, 2016 Third Avenue West, Vancouver.

Lumber Workers' Industrial Union, No. 120 (I.W.W.)—Secretary, Geo. Murray, 318 Cordova Street West, Vancouver. Meets at 318 Cordova Street West, Vancouver, on Sundays at 2.30 p.m.

Machinists, International Association of, Local No. 182—President, E. B. McLean, 453 Sixth Avenue West, Vancouver; Financial Secretary, J. G. Keefe, 4514 Eleventh Avenue West, Vancouver. Meets at 313 Holden Building, Vancouver, at 8 p.m. on second and fourth Fridays.

Machinists, International Association of, Local No. 692—Secretary, Percy R. Bengough, 2416 Pandora Street, Vancouver. Meets at 804 Holden Building, Vancouver, at 8 p.m. on second and fourth Tuesdays.

Machinists, International Association of, No. 702—President, W. W. Hague, 3489 Forty-first Avenue West, Vancouver; Secretary, J. A. Holmes, 1754 Pendrell Street, Vancouver.

Mailers' Union, No. 70 (I.T.U.)—President, A. R. C. Holmes; Secretary, Herbert E. E. Fader, 2718 Oxford Street, Vancouver. Meets at Holden Building, Hastings Street East, Vancouver, on first Tuesday in each month at 6 p.m.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 167—President, C. J. Beck, 1612 Eighth Avenue West, Vancouver; Secretary, A. D. Mcdonald, Box 115, Vancouver. Meets at 804 Holden Building, Vancouver, at 11 a.m. on third Sunday in month.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 1734—President, Abner Shunn, 5829 Lancaster Street, Vancouver; Secretary, John Roscow, 14 Fourteenth Avenue West, Vancouver. Meets at Eagle Hall at 10.30 a.m. on last Sunday in month.

Marine Engineers, National Association of, No. 7—President, J. I. Marshall, 2247 Tenth Avenue West, Vancouver; Secretary, E. Read, 232 Thirteenth Street West, North Vancouver.

Marine Transport Workers' Union, No. 510 (I.W.W.)—Secretary, Geo. Murray, 318 Cordova Street West, Vancouver. Meets at 318 Cordova Street West at 8 p.m. on Wednesdays.

Milk Wagon Drivers & Dairy Employees, Local No. 464—Secretary, B. Showler, 1115 Robson Street, Vancouver. Meets at 16 Hastings Street East, Vancouver, at 8 p.m. on second and fourth Fridays in month.

Mill & Factory, Local Union No. 1599—President, H. C. Matthews, 571 Eighteenth Avenue East, Vancouver; Recording Secretary, R. G. Inder, 1848 Vine Street, Vancouver. Meets at 313 Holden Building, Vancouver, on first and third Thursdays of each month at 8 p.m.

Moulders of North America, International Union of, Local No. 281—Secretary, J. Pinkerton, 2159 Victoria Drive, Vancouver. Meets at 16 Hastings Street East, Vancouver, at 8 p.m. on first and third Fridays in month.

Musicians, American Federation of (Musicians' Mutual Protective Association), Local No. 145—President, Edward A. Jamieson, 991 Nelson Street; Secretary, Will. Edmunds, 991 Nelson Street, Vancouver. Meets at G.W.V.A. Auditorium, 901 Dunsmuir Street, Vancouver, at 10 a.m. on second Sunday in month.

Newspaper Vendors, Federal Labour Union No. 7 (T. & L.C.)—President, John Pell; Secretary, D. Cameron, 523 Thurlow Street, Vancouver. Meets first and third Thursdays of month at 8 p.m.

Painters, Decorators & Paperhangers of America, Local No. 138—President, A. B. Hodge, 5274 Chambers Street, Vancouver; Secretary, D. D. Bliss, 1033 Haro Street, Vancouver. Meets at 163 Hastings Street West, Vancouver, at 8 p.m. on second and fourth Thursdays of month.

Photo Engravers' International Union of North America, Local No. 54—President, Edgar Sutherland, c/o Clealand-Kent Engraving Co., Vancouver; Secretary, James C. Wilson, 1640 Arbutus Street, Vancouver. Meets at 16 Hastings Street East, Vancouver, at 8 p.m. on first Wednesday in month.

Pile Drivers, Bridge, Wharf & Dock Builders, Local No. 2404—President, Chas. Anderson, Box 320, Vancouver; Financial Secretary, J. Thompson, Box 320, Vancouver; Recording Secretary, A. McMillan, Box 320, Vancouver. Meets at 112 Hastings Street West, Vancouver, at 8 p.m. each Friday.

Plasterers & Cement Finishers, International Association of the United States and Canada, Local No. 89—President, Alfred Hurry, 861 Thirty-fourth Avenue East, Vancouver; Secretary, Edward Williams, 1131 Barclay Street, Vancouver. Meets at Holden Building, 16 Hastings Street East, Vancouver, at 8 p.m. on first and third Wednesdays in month.

Plumbers & Steam Fitters of the United States and Canada, United Association of, Local No. 170—President, S. G. Smylie, 3765 Thirtieth Avenue West, Vancouver; Secretary and Business Agent, Wm. Watt, 984 Seventh Avenue West, Vancouver. Meets at Holden Building, 16 Hastings Street East, Vancouver, at 8 p.m. on second and fourth Fridays.

Policemen's Federation (Chartered by Trades & Labour Congress of Canada), Local No. 12—President, David Mitchell, 3142 Twentieth Avenue East, Vancouver; Secretary, W. M. Thompson, 1362 Seventeenth Avenue East, Vancouver. Meets at 16 Hastings Street East, Vancouver, at 7.30 p.m. on fourth Tuesday in month.

Printing Pressmen & Assistants, International Union of North America, Local No. 69—President, H. F. Longley, 308 Sixth Street, North Vancouver; Secretary, W. W. Quigley, 2083 Second Avenue West, Vancouver. Meets at 213 Holden Building, Vancouver, at 8 p.m. on second Tuesday in month.

Projectionists' Society, B.C., Local No. 348—President, J. R. Foster, 1161 Granville Street, Vancouver; Secretary, G. Gerrard, 2732 Carleton Street, Vancouver. Meets on first Friday in month in the Holden Building at 11.30 a.m.

Radio Division, Electrical Communication Workers of Canada, B.C. No. 3—Secretary, C. T. Foote, 1414 Douglas Street, Victoria.

Railroad Trainmen, Brotherhood of, No. 144—President, G. H. Patterson, 1030 Robson Street, Vancouver; Secretary, D. A. Munro, 70 Seventh Avenue West, Vancouver. Meets at I.O.O.F. Hall, Hamilton Street, on first Tuesday at 7.30 p.m. and third Sunday at 2.30 p.m.

Railway Carmen of America, Brotherhood of, Local No. 58—President, A. S. Ross, 5873 Prince Edward Street, Vancouver; Secretary, J. D. Vulliamy, 2215 Fifteenth Avenue West, Vancouver. Meets at Cotillion Hall, Davie and Granville Streets, on first and third Fridays in month at 8 p.m.

Railway Conductors of America, Order of, Division No. 267—President, J. R. Burton, 1324 First Avenue East, Vancouver; Secretary, J. B. Physick, 1156 Thurlow Street, Vancouver. Meets at I.O.O.F. Hall on first Sunday at 2 p.m.

Railway Employees, Canadian Brotherhood of, Division No. 59—President, C. Bird, 2030 Union Street, Vancouver; Secretary, H. Winter, 2404 Guelph Street, Vancouver. Meets on first Friday in each month at 8 p.m. No set hall.

Railway Mail Clerks' Association—President, H. F. Hatt, c/o Railway Mail Service, Vancouver; Secretary, A. A. Overend, c/o Railway Mail Service, Vancouver. Meets in Room 18, Post Office Building, Vancouver, at 2.30 p.m. on last Tuesday of month.

Railway & Steamship Clerks, Freight Handlers, Express & Station Employees, Brotherhood of, No. 630—President, J. Brodie; Secretary, J. W. Hope, 110 Empire Building, Vancouver. Meets at Belvedere Hall, cor. of Tenth and Main Streets, at 8 p.m. on first Monday in month.

Railway & Steamship Clerks, Lodge 626—President, R. G. Walker, 1052 Richards Street, Vancouver; Secretary, E. Baldock, 6433 Argyle Street, Vancouver. Meets at C.P.R. Storeroom, foot of Drake Street, Vancouver, on second Friday of month at 8 p.m.

Railway & Steamship Clerks, Freight Handlers, Express & Station Employees, Brotherhood of, Local No. 46—Secretary, F. H. Fallows, 1504 St. Andrews Street, North Vancouver. Meets in I.O.O.F. Hall, Vancouver, on fourth Friday at 8 p.m.

Retail Employees' Association No. 1 (Independent), Vancouver—President, H. O. Eccleston, West Vancouver P.O.; Secretary, Robert Skinner, 571 Twenty-second Avenue West, Vancouver.

Sailors & Firemen's Union of Canada, National—Secretary, W. Griffiths, 305 Cambie Street, Vancouver.

Seafarers' Union of B.C., The Federated—President, R. Thom, 565 Howe Street; Vice-President, D. Gillespie, Vancouver; Secretary, W. Donaldson, 2054 Wall Street, Vancouver.

Sheet Metal Workers, Local No. 280—President, Austin Fisher, 1952 Fourth Avenue West, Vancouver; Secretary, David McPherson, 807 Holden Building, Vancouver. Meets at 313 Holden Building, 16 Hastings Street East, at 8 p.m. on first and fourth Thursdays.

Shingle Weavers' Union, No. 17813—President, J. N. Chute, 1163 Pender Street East, Vancouver; Secretary, W. H. Matthew, Joyce P.O., South Vancouver. Meets in Holden Building, Vancouver, on the fourth Sunday at 7.30 p.m.

Shinglers' Union (Independent), Vancouver—President, Wm. Harris, 163 Forty-ninth Avenue West, Vancouver; Secretary, J. W. Austin, 565 Beatty Street, Vancouver. Meets at Electrical Workers' Union Hall monthly.

Steam Engineers, Sawyers, Filers & Mill Mechanics, Canadian Society of Certified, Headquarters No. 1—President, Lewis Thompson, Gordon Drive, South Vancouver; Secretary, H. Isherwood, 858 Sixty-sixth Avenue East, South Vancouver. Meets on second and fourth Mondays in month at 163 Hastings Street West at 8 p.m.

Steam & Operating Engineers, International Union of, Local No. 844—President, E. McCallum, 2786 Albert Street, Vancouver; Secretary, Geo. Pettipiece, 641 Cambie Street, Vancouver. Meets at 806 Holden Building, Vancouver, at 8 p.m. on every Thursday.

Steam & Operating Engineers, Industrial Union of, No. 882—Vice-President, W. G. Hulbert, 1639 Fourth Avenue West; Secretary, Chas. Watson, 871 Thirteenth Avenue East, Vancouver. Meets every second Wednesday at 8 p.m., Room 806, Holden Building, Vancouver.

Steam Shovel & Dredgermen, International Brotherhood of, Local No. 62—President, D. Clark, Aldergrove; Secretary, G. D. Lamont, 223 Carrall Street, Vancouver.

Stereotypers & Electrotypers, International Union of, Local No. 88—President, J. Murphy; Secretary, J. McKinnon, 3635 Fourteenth Avenue West, Vancouver. Meets at 310 Holden Building at 4 p.m. on first Monday in month.

Stone-cutters' Association of North America—President, E. J. Thomas, Fifty-ninth Avenue, Vancouver; Secretary, E. W. Tonge, 4119 Grace Avenue, Burnaby Lake. Meets at 810 Holden Building on second Tuesday in month at 8 p.m.

Street & Electric Railway Employees of America, Amalgamated Association of, Division No. 101—President, J. E. Smith, 1551 Thirty-seventh Avenue East, Vancouver; Secretary, H. C. Griffin, 447 Sixth Avenue East, Vancouver. Meets at K. of P. Hall, Eighth Avenue and Scotia Street, Vancouver, at 10.15 a.m. on first Monday and 7 p.m. on third Monday.

Switchmen's Union of North America, Local No. 111—Secretary, A. S. Crosson, 1228 Howe Street. Meets at 209 Holden Building on first Sunday in month.

Tailors' Union of America, Journeymen, Local No. 178—President, A. R. Gatenby, 1721 Cotton Drive, Vancouver; Secretary, C. McDonald, Box 503, Vancouver. Meets at 16 Hastings Street East, Vancouver, at 8 p.m. on first Thursday in month.

Teamsters, Chauffeurs, Stablemen & Helpers, No. 466, International Brotherhood of—President, A. C. McKay, 70 Sixth Avenue East, Vancouver; Secretary, A. P. Black, 880 Homer Street, Vancouver. Meets at 213 Holden Building on the second and fourth Wednesdays at 8 p.m.

Theatrical Stage Employees' Federation & Moving Picture Machine Operators of the United States and Canada, International Alliance of, Local No. 118—President, G. W. Allin, Box 711, Vancouver; Secretary, G. Martin, Box 711, Vancouver. Meets at 991 Nelson Street, Vancouver, at 9.30 a.m. on second Friday in month.

Typographical Union, International, Local No. 226—President, C. S. Campbell, 804 Holden Building, Vancouver; Secretary, R. H. Neelands, 804 Holden Building, Vancouver. Meets at Room 213, Holden Building, Vancouver, at 2 p.m. on last Sunday in month.

Upholsterers' International Union No. 26—President, A. Cook, 170 Fifty-fourth Avenue East, South Vancouver; Secretary, J. W. Gordon, 2292 Wellington Avenue, South Vancouver. Meets at 342 Pender Street West, Vancouver, on fourth Monday of month at 8 p.m.

Waterfront Freight Handlers' Association—President, H. P. Hazen, rear of 233 Main Street, Vancouver; Secretary, A. McAdam, 4363 Hastings Street East, Vancouver. Meets in rear of 233 Main Street, Vancouver, on first and third Wednesdays in month at 8 p.m.

Waterfront Workers' Association (Independent), Vancouver and District—Secretary, C. J. Wilson, 132 Dunlevy Avenue, Vancouver.

Wood-workers, Amalgamated Society of, No. 1 Branch—President, G. Richardson, 2856 Oxford Street, Vancouver; Business Agent, J. McKinley, 607 Fifty-second Avenue East; Secretary, C. E. Ellis, 1657 Thirty-sixth Avenue East, South Vancouver. Meets at Flack Building, 163 Hastings Street West, Vancouver, at 8 p.m. on second and fourth Tuesday of each month.

Wood-workers, Amalgamated Society of, No. 2 Branch—Business Agent, J. McKinley, 607 Fifty-second Avenue East, Vancouver; Secretary, W. Bray, Vancouver. Meets at Flack Building, 163 Hastings Street West, Vancouver, on first and third Tuesdays at 8 p.m.

Vernon.

Typographical Union, No. 541—President, H. G. Bartholomew, Box 643, Kelowna; Secretary, W. B. Hilliard, R.R. No. 1, Enderby. Meetings held at Vernon on last Sunday in month.

Victoria.

Barbers, Journeymen, International Union of, Local No. 372—President, J. L. Blakeney, 1323 Government Street, Victoria; Secretary, Jas. A. Green, 1319 Douglas Street. Meets at A.O.F. Hall on fourth Monday in month at 8 p.m.

Boilermakers, Iron Shipbuilders & Helpers of America, International Brotherhood of, Local No. 191—Secretary, P. W. Wilson, 1837 Crescent Road, Victoria. Meets at Labour Hall at 8 p.m. on second and fourth Mondays.

Bookbinders, International Brotherhood of, Local No. 147—President, W. W. Laing, 125 Linden Avenue, Victoria; Secretary, J. A. Wiley, 141

Clarence Street, Victoria. Meets at 103 Union Building, Victoria, at 8 p.m. on fourth Friday in month.

Brewery, Flour, Cereal & Soft Drink Workers of America, International Union of United, Local No. 280—President, G. M. Brewer, Crease Avenue, Saanich; Secretary, Ernest Orr, 58 Sims Avenue, Saanich. Meets at Trades Hall, Broad Street, Victoria, at 8 p.m. on second Tuesday in month.

Bricklayers, Masons & Plasterers of America, International Union of, Local No. 2—President, E. W. Mertton, 1039 Hillside Avenue, Victoria; Secretary, J. H. Owen, 541 Toronto Street, Victoria. Meets at City Temple Hall, Victoria, at 8 p.m. on first Monday in month.

Canadian Express Employees, Brotherhood of, No. 20—President, T. C. Johns; Secretary, F. E. Dutot, 1549 Bank Street, Victoria. Meets at Canadian Pacific Railway Building on first Monday in month at 8 p.m.

Carpenters & Joiners (Shipwrights), United Brotherhood of, Local No. 1598—President, Wm. Brown, Fourth Street; Recording Secretary, J. Townsend, Box 26, Victoria. Meets at Trades Hall, Broad Street, at 8 p.m. on first and third Mondays in month.

Civic Employees, Local No. 50—President, A. E. Fraser, 824 Pembroke Street, Victoria; Secretary, W. E. Farmer, 2948 Scott Street, Victoria. Meets at 842 North Park Street, Victoria, at 8 p.m. on second Wednesday.

Cooks, Waiters & Waitresses, Local No. 459—President, Herbert Lane; Secretary, F. Dovey, Box 233, Victoria. Meets at Room 7, Surrey Building, Yates Street, on first and third Tuesdays in month at 8.30 p.m.

Electrical Workers, International Brotherhood of, Local No. 230—President, John Grant, 830 Princess Avenue, Victoria; Secretary, W. Reid, 2736 Asquith Street, Victoria. Meets at Harmony Hall, Fort Street, at 8 p.m. on first and third Tuesdays of month.

Firefighters, City Union No. 258—President, P. N. Guy, Headquarters Fire Hall, Victoria; Secretary, T. A. Heaslip, No. 5 Fire Hall, Victoria. Meets at Headquarters Fire Hall, Cormorant Street, at 8 p.m. on or about first of each month.

Granite Cutters' International Association of America—President, J. Eva, Orillia Street, Saanich; Secretary, J. Barlow, Box 392, Victoria. Meets at K. of P. Hall at 8 p.m. on third Friday of each month.

Letter Carriers, Federated Association of, No. 11—President, W. J. Pearson, 2253 Dalhousie Street, Victoria; Secretary, W. Cragmyle, 2872 Inez Drive, Victoria.

Locomotive Firemen & Engineers, Brotherhood of, Local No. 690—President, E. S. Cottle, Mary Street, Victoria; Secretary, H. Richmond, 615 Wilson Street, Victoria. Meets at A.O.F. Hall, Broad Street, at 8 p.m. on first Wednesday and third Thursday in month.

Longshoremen's Association, No. 38-46, International—President, J. Wilson, 706 Blanshard Street, Victoria; Secretary, Francis Older, 746 Humboldt Street, Victoria.

Machinists, Local No. 456—Secretary, C. B. Lister, 3226 Oak Street, Saanich. Meets at K. of P. Hall, North Park Street, fourth Thursday in month at 8 p.m.

Maintenance-of-way Employees & Railway Shop Labourers, United Brotherhood of, Local No. 2824—President, W. A. Wright, 601 Kelvin Road, Victoria; Secretary, G. E. Wilkinson, 50 Sims Avenue, Victoria. Meets at Labour Hall, Broad Street, on third Sundays of March, June, September, and December at 2 p.m.

Moulders, International Union of North America, Local No. 144—President, G. Stancombe; Secretary, Thos. Jacklin, 1534 Redfern Street, Victoria. Meets at City Temple Hall at 8 p.m. on second Wednesday in month.

Musicians, American Federation of (Musicians' Mutual Protective Association), Local No. 247—President, Stanley Peele, 1210 MacKenzie Street, Victoria; Secretary, W. H. Press, 1060 Burdett Avenue, Victoria. Meets at K. of P. Hall at 2 p.m. on second Sunday in October and April and 10.30 a.m. in May and September.

Painters, Decorators & Paper-hangers, Brotherhood of, Local No. 1119—President, A. Weatherill, 1014 Caledonia Avenue, Victoria; Secretary, J. Whittle, 1747 Stanley Avenue, Victoria. Meets at Room 16, Green Block, Broad Street, on first and third Thursdays in month at 8 p.m.

Pattern Makers' League of North America—President, J. LeSueur, 1272 Walnut Street, Victoria; Secretary, J. A. McCahill, Box 851, Victoria. Meets on second Monday each month at 326 John Street at 8 p.m.

Photo Engravers, International Union of North America (Auxiliary of Vancouver), Local No. 54—Secretary, Frank M. Day, c/o Engraving Department, "The Times," Victoria.

Pile Drivers, Bridge, Wharf & Dock Builders, No. 2415—President, E. E. Goldsmith, 2565 Grahame Street, Victoria; Secretary, A. M. Davis, 1506 Holly Street, Victoria. Meets at 16 Green Block, Broad Street, at 8 p.m. on second and fourth Tuesdays of month.

Plumbers & Steam Fitters of the United States and Canada, United Association of, Local No. 324—President, J. Fox, 2858 Austin Avenue; Secretary, H. Johnson, 3261 Harriet Road, Victoria. Meets at Trades Hall, Broad Street, at 8 p.m. on second and fourth Tuesdays.

Policemen's Federal Union, Local No. 24—President, Thomas Hall, Police Station, Victoria; Secretary, A. H. Bishop, 316 Skinner Street, Victoria. Meets at Police Headquarters at 3.15 p.m. on first Tuesday in month.

Postal Clerks' Association (Dominion)—President, L. F. Hawkes, Cowper Apartments, Menzies Street, Victoria; Secretary, G. S. Bloomfield, 2528 Garden Street, Victoria. Meets at P.O. Building, Victoria.

Printing Pressmen & Assistants, International Union of North America, Local No. 79—President, Thomas Nute, 534 Michigan Street, Victoria; Secretary, F. H. Larssen, 1236 MacKenzie Street, Victoria. Meets at Campbell Building (sixth floor) at 8 p.m. on second Monday in month.

Railway Carmen of America, Victoria Lodge No. 50—Secretary-Treasurer, John H. Booth, 2421 Mowat Street (Willows), Victoria.

Railway Conductors, No. 289—Chief Conductor, E. H. Spall, Wellington, V.I.; Secretary, J. Martin, 2109 Vancouver Street, Victoria.

Railway & Steamship Clerks, Freight Handlers, Express & Station Employees, No. 1137—Presi-

dent, E. J. Leonard, 1441 Begbie Street, Victoria; Secretary, H. McDougall, 1484 Lang Street, Victoria. Meets at Trades Hall at 8 p.m. on first Thursday in month.

Railway Trainmen, Brotherhood of, Local No. 613—President, C. H. Cross, 704 Lampson Street, Esquimalt; Secretary, W. M. Parlby, 780 Dominion Road, Esquimalt. Meets at A.O.F. Hall, Broad Street, Victoria, at 8 p.m. on second Tuesday and last Friday in month.

Retail Clerks, International Association of, Local No. 604—President, J. Talbot, 1737 Bank Street, Victoria; Secretary, H. H. Hollins, Trades Hall, Broad Street. Meets at Trades Hall, Broad Street, at 8 p.m. on second Tuesday in month.

Sheet Metal Workers, Amalgamated, International Alliance of, Local No. 134—President, J. McMinn, 634 Rupert Street, Victoria; Secretary, Thos. Brooke, 1543 Morley Street, Victoria. Meets at City Temple Hall, 842 North Park Street, at 8 p.m. on first Thursday.

Steam Engineers, Sawyers, Filers & Mill Mechanics, No. 3—President, J. McKenzie; Secretary, B. Burton, Sidney. Meets at Trades Hall at 8 p.m. on first Monday in month.

Steam & Operating Engineers, International Union, Local No. 446—President, C. Maclean, 2640 Avesbury Street, Victoria; Secretary, H. Geake, 1242 Faithful Street, Victoria (Box 502). Meets at K. of P. Hall at 8 p.m. on second and fourth Tuesdays.

Stonecutters' Association of North America (Journeymen)—President, Joseph Barlow, Box 853, Victoria; Secretary, Wm. McKay, Box 853, Victoria. Meets at 8 p.m. on second Thursday in Labour Hall, Broad Street, Victoria.

Street & Electric Railway Employees of America, Amalgamated Association of, Division No. 109—President, E. F. Fox, 1219 Basil Avenue, Victoria; Secretary, W. Turner, 2169 Fair Street, Victoria. Meets corner Broad and Yates Streets, Victoria, at 10 a.m. and 7 p.m. on second Tuesday in month.

Tailors' Journeymen Union of America, Local No. 142—President, M. Mobray; Financial Secretary, H. D. Reid, 3034 Washington Avenue, Victoria. Meets at 8 p.m. on first Monday in month.

Teamsters & Chauffeurs, Stablemen & Helpers, International Brotherhood of, Local No. 365—President, N. Hanson, 1463 Bay Street, Victoria; Secretary, P. G. Rabey, 2536 Blanshard Street, Victoria. Meets at Veterans of France, Douglas and Courtney Streets, at 8 p.m. on first Tuesday.

Theatrical Stage Employees & Moving Picture Machine Operators of the United States and Canada, International Alliance of, Local No. 168—Secretary, C. More, 949 Balmoral Road, Victoria. Meets at Trades Hall, Broad Street, Victoria, at 11.15 p.m. on first Thursday in month.

Typographical Union, International, Local No. 201—President, J. D. Davidson, 378 Burnside Road, Victoria; Secretary, T. A. Burgess, Box 1183, Victoria. Meets at Campbell Building (sixth floor), Victoria, at 2 p.m. on last Sunday in month.

Upholsterers & Trimmers, No. 25—Secretary, J. F. Sharp, 570 Yates Street, Victoria. Meets in Campbell Building at 8 p.m. on second and fourth Mondays in month.

Willow River.

Maintenance-of-way Employees, Railway & Shop Labourers, No. 202—President, C. M. LeClaire, Snowshoe; Secretary, F. Swanson, Hutton Mills.

Ymir.

Mine, Mill and Smelters, International Union—Secretary, W. B. McIsaac, Ymir.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF ATTORNEY-GENERAL

REPORT

OF THE

INSPECTOR OF MUNICIPALITIES

FOR THE YEAR ENDED

DECEMBER 31ST, 1926

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

To His Honour ROBERT RANDOLPH BRUCE,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

I have the honour to transmit herewith the Annual Report of the Inspector of Municipalities for the year ended December 31st, 1926.

All of which is respectfully submitted.

A. M. MANSON,

Attorney-General.

Victoria, July, 1927.

REPORT OF THE INSPECTOR OF MUNICIPALITIES.

VICTORIA, B.C., July, 1927.

Hon. A. M. Manson,
Attorney-General.

SIR,—I have the honour to submit herewith a statistical report of the affairs of the municipalities of the Province for the year 1926.

There is comparatively little in the report which requires special comment. There are no very great changes from the preceding year, but the statistics shown nevertheless all indicate satisfactory progress.

The assessment figures show practically no change in the valuation of land, but they show an increase of $20,000,000 in the valuation of improvements. This represents, I think, fairly well the development which is taking place generally throughout the Province.

New debenture liabilities were incurred during the year to the amount of $5,753,392, although the net increase in debenture debts was only $3,775,427. The largest items of borrowing were as follows: City of Vancouver, general debentures, $1,920,000; local improvement, $401,986. Point Grey, general, $626,000; local improvement, $1,188,332. Corporation of the District of North Vancouver, $274,100; Corporation of the District of South Vancouver, $194,928; City of Prince Rupert, $190,030; City of New Westminster, $125,000; Corporation of the District of Burnaby, $111,000; Corporation of the District of West Vancouver, $100,000. The City of Port Moody was also obliged to issue its own bonds to the amount of $100,000 to replace the matured bonds of the Port Moody Steel Works which had been guaranteed by the city. The fate of the Port Moody Steel Works was that which very commonly falls to the bonused industry, and the city after paying $7,000 a year interest during the lifetime of the bonds was obliged last year to take up the liability by an issue of its own debentures to the full amount of $100,000. Fortunately the city has been able without difficulty to carry the additional load and may in time realize a substantial sum from the sale of the real estate belonging to the Steel Works.

The City of Port Coquitlam is still in arrears with the interest on its debentures, but is gradually improving its position.

The arrears of taxes and the investments of the municipalities in tax-sale lands have again been reduced, and the condition of the sinking funds shows further improvement.

The general conditions prevailing throughout the incorporated areas of the Province are very satisfactory.

ROBERT BAIRD,
Inspector of Municipalities.

I.—ASSESSMENTS, 1927.

Cities.

Municipality.	Value of Taxable Land.	Value of Taxable Improvements.	Total Taxable Property.	Land and Improvements Exempt from Taxation.	Grand Total.	Percentage Improvements taxed.	Population.	Area in Acres.
Alberni	$ 214,068 00	$ 223,850 00	$ 437,918 00	$ 238,790 00	$ 676,708 00	*Nil*	490	1,553
Armstrong	510,170 00	518,710 00	1,028,880 00	237,705 00	1,266,585 00	50	1,000	1,000
Chilliwack	776,000 00	1,026,050 00	1,802,050 00	265,025 00	2,067,075 00	20	1,800	1,040
Courtenay	447,469 00	503,660 00	951,129 00	75,375 00	1,026,504 00	50	950	800
Cranbrook	631,443 00	1,334,665 00	1,966,108 00	248,950 00	2,215,058 00	50	2,725	200
Cumberland	118,700 00	195,810 00	314,510 00	77,200 00	391,710 00	50	1,000	40
Duncan	577,321 00	774,400 00	1,351,721 00	221,805 00	1,573,526 00	*Nil*	1,300	500
Enderby	311,069 00	270,150 00	581,219 00	200,818 00	782,037 00	50	800	655
Fernie	835,437 00	1,452,000 00	2,287,437 00	605,100 00	2,892,537 00	50	3,500	331
Grand Forks	320,645 00	485,600 00	806,245 00	455,065 00	1,261,310 00	50	1,500	1,697
Greenwood	68,275 00	129,495 00	197,770 00	269,045 00	466,815 00	33⅓	320	640
Kamloops	2,112,902 00	3,347,820 00	5,460,722 00	1,278,100 00	6,738,822 00	25	5,000	912
Kaslo	180,217 00	255,690 00	435,907 00	158,271 00	594,178 00	50	950	400
Kelowna	1,512,938 60	2,486,685 00	3,999,623 60	458,050 00	4,457,673 60	33⅓	3,639	1,281
Ladysmith	338,965 00	426,250 00	765,215 00	110,860 00	876,075 00	*Nil*	2,250	220
Merritt	602,115 00	785,870 00	1,387,985 00	337,639 00	1,725,624 00	*Nil*	1,800	1,615
Nanaimo	2,256,922 00	3,337,500 00	5,594,422 00	681,545 00	6,275,967 00	*Nil*	8,900	720
Nelson	1,902,444 00	3,247,880 00	5,150,324 00	888,098 00	6,038,422 00	50 (1)	5,500	751
New Westminster	9,869,107 00	9,646,360 00	19,515,467 00	7,001,440 00	26,516,907 00	*Nil*	18,000	3,481
North Vancouver	8,190,433 00	7,121,343 00	15,311,776 00	3,592,400 00	18,904,176 00	*Nil*	8,500	2,750
Port Alberni	449,365 00	1,006,250 00	1,455,615 00	370,858 00	1,826,473 00	*Nil*	1,400	1,960
Port Coquitlam	987,513 00	684,375 00	1,671,888 00	1,215,514 00	2,887,402 00	25	1,800	6,200
Port Moody	1,276,900 00	1,145,325 00	2,422,225 00	166,093 40	2,588,318 40	*Nil*	1,400	3,000
Prince George	1,148,658 00	1,057,647 00	2,206,305 00	856,426 00	3,062,731 00	*Nil*	3,000	1,092
Prince Rupert	5,062,239 00	1,935,570 00	6,997,809 00	6,136,777 00	13,134,586 00	*Nil*	6,460	2,240
Revelstoke	880,190 00	1,316,750 00	2,196,940 00	869,145 00	3,066,085 00	*Nil*	3,500	595
Rossland	572,640 00	1,052,055 00	1,624,695 00	609,060 00	2,233,755 00	50	2,400	1,920
Salmon Arm	456,713 50	432,275 00	888,988 50	115,197 50	1,004,186 00	50	762	520
Slocan	39,435 00	60,055 00	99,490 00	49,900 00	149,390 00	10 (2)	400	192
Trail	1,054,390 00	1,962,355 00	3,016,745 00	411,325 00	3,428,070 00	50	6,000	664
Vancouver	128,269,116 00	98,700,410 00	226,969,526 00	.....	226,969,526 00	50	128,350	10,784
Vernon	1,721,670 00	1,881,000 00	3,602,670 00	1,035,110 00	4,637,780 00	50	4,000	2,000
Victoria	25,766,604 00	28,387,030 00	54,153,634 00	17,841,300 00	71,994,934 00	50	38,750	4,637
Totals	$199,462,074 10	$177,190,885 00	$376,652,959 10	$ 47,077,986 90	$423,730,946 00	.....	268,146	56,390

(1) For school purposes only. (2) For debt only.

Districts.								
Burnaby	$ 10,899,931 00	$ 8,790,095 00	$ 19,690,026 00	$ 5,580,749 00	$ 25,270,775 00	*Nil*	14,500	21,500
Chilliwhack	3,279,039 00	1,480,762 00	4,759,801 00	71,800 00	4,831,601 00	*Nil*	6,000	45,000
Coldstream	867,752 00	1,400,557 00	2,268,309 00	20,885 00	2,289,194 00	*Nil*	560	17,000
Coquitlam	1,739,953 00	656,100 00	2,396,053 00	6,441,755 00	8,837,808 00	*Nil*	3,750	37,120
Delta	5,342,647 00	1,179,440 00	6,522,087 00	120,600 00	6,642,687 00	50	2,500	42,000
Esquimalt	2,576,335 00	1,600,785 00	4,177,120 00	7,281,430 00	11,458,550 00	25	4,000	1,500
Fraser Mills	143,220 00	319,939 00	463,159 00	.....	463,159 00	50	800	390.46
Glenmore	478,460 00	638,210 00	1,116,670 00	114,385 00	1,231,055 00	50	302	2,881.96
Kent	1,006,559 88	509,220 00	1,515,779 88	15,840 00	1,531,619 88	*Nil*	1,180	47,360
Langley	2,314,483 00	2,283,855 00	4,598,338 00	196,865 00	4,795,203 00	50 (1)	5,000	75,907
Maple Ridge	1,910,627 00	1,663,205 00	3,573,832 00	166,380 00	3,740,212 00	50 (1)	4,800	45,000
Matsqui	2,241,724 00	2,024,913 00	4,266,637 00	262,700 00	4,529,337 00	50 (2)	4,500	54,145
Mission	924,781 00	2,262,677 00	3,187,458 00	129,193 00	3,316,651 00	50	4,000	52,000
North Cowichan	1,815,299 00	3,418,976 00	5,234,275 00	208,949 00	5,443,224 00	10	3,000	35,000
North Vancouver	5,414,669 00	3,899,955 00	9,314,624 00	3,162,079 00	12,476,703 00	*Nil*	5,000	48,000
Oak Bay	3,220,896 00	4,956,540 00	8,177,436 00	394,713 00	8,572,149 00	25	4,800	2,552
Peachland	255,095 00	225,190 00	480,285 00	75,230 00	555,515 00	*Nil*	510	3,520
Penticton	1,854,995 00	3,141,875 00	4,996,870 00	535,550 00	5,532,420 00	20	4,000	7,044
Pitt Meadows	825,450 00	261,340 00	1,086,790 00	79,125 00	1,165,915 00	50 (1)	486	14,000
Point Grey	21,099,976 00	31,412,713 00	52,512,689 00	3,503,120 00	56,015,809 00	22	26,250	8,516
Richmond	5,113,555 00	2,168,245 00	7,281,800 00	408,845 00	7,690,645 00	50	5,500	30,000
Saanich	5,329,725 00	6,602,028 00	11,931,753 00	1,692,125 00	13,623,878 00	15	12,000	45,000
Salmon Arm	852,169 00	945,295 00	1,797,464 00	86,405 00	1,883,869 00	*Nil*	4,000	46,000
South Vancouver	11,536,220 50	12,106,313 00	23,642,533 50	5,562,925 00	29,205,458 50	50	41,000	9,200
Spallumcheen	1,931,730 00	697,750 00	2,629,480 00	183,260 00	2,812,740 00	*Nil*	1,820	65,000
Sumas	719,780 00	366,190 00	1,085,970 00	20,722 00	1,106,692 00	50	975	19,100
Summerland	1,171,229 55	1,833,668 00	3,004,897 55	258,594 00	3,263,491 55	*Nil*	2,000	13,000
Surrey	4,692,041 00	3,760,155 00	8,452,196 00	778,630 00	9,230,826 00	*Nil*	6,500	76,000
Tadanac	187,928 00	3,837,788 00	4,025,716 00	.....	4,025,716 00	50	291	740
West Vancouver	3,030,820 00	2,303,327 00	5,334,147 00	1,048,140 00	6,382,287 00	*Nil*	6,750	24,320
Totals	$102,777,089 93	$106,747,106 00	$209,524,195 93	$ 38,400,994 00	$247,925,189 93	.....	176,774	888,876.42

(1) For school purposes only. (2) Taxes levied upon 50 per cent. of assessed value of improvements which exceed $10,000.

I.—ASSESSMENTS, 1927—VILLAGES.

Municipality.	Value of Taxable Land.	Value of Taxable Improvements.	Total Taxable Property.	Land and Improvements Exempt from Taxation.	Grand Total.	Percentage Improvements taxed.	Population.	Area in Acres.
Abbotsford	$ 107,570 00	$ 184,490 00	$ 292,060 00	$ 41,000 00	$ 333,060 00	50	450	160
Burns Lake	33,635 00	79,050 00	112,685 00	27,025 00	139,710 00	50	150	154
Creston	146,448 00	194,107 00	340,555 00	20,200 00	360,755 00	50	600	430
Mission	460,177 00	412,930 00	873,107 00	108,125 00	981,232 00	50	1,000	821
Smithers	201,205 00	381,990 00	583,195 00	125,290 00	708,485 00	40	1,000	950
Vanderhoof	43,825 00	100,125 00	143,950 00	.....	143,950 00	50	325	220
Totals	$ 992,860 00	$ 1,352,692 00	$ 2,345,552 00	$ 321,640 00	$ 2,667,192 00	.....	3,525	2,735
Cities forward	199,462,074 10	177,190,885 00	376,652,959 10	47,077,986 90	423,730,946 00	.....	268,146	56,390
Districts forward	102,777,089 93	106,747,106 00	209,524,195 93	38,400,994 00	247,925,189 93	.....	176,774	888,876.42
Cities, districts, and villages	$303,232,024 03	$285,290,683 00	$588,522,707 03	$ 85,800,620 90	$674,323,327 93	.....	448,445	948,001.42

II.—TAX LEVY, 1927.

Cities.

Municipality.	General.	School.	Debt.	Total.	Total Levy Previous Year.
Alberni	0.85	20.65	20.5	42.0	42.0
Armstrong	8.5	11.5	10.0	30.0	30.1
Chilliwack	12.0	18.5	19.5	50.0	50.0
Courtenay	7.0	16.25	1.75	25.0	25.0
Cranbrook	4.0	25.0	11.0	40.0	42.0
Cumberland	9.0	18.0	.....	27.0	27.0
Duncan	14.5	17.0	6.0	37.5	38.5
Enderby	2.28	12.75	18.97	34.0	34.0
Fernie	7.43	24.42	6.75	38.6	38.0
Grand Forks	3.0	16.0	13.0	32.0	33.0
Greenwood	6.0	19.0	39.0	64.0	64.0
Kamloops	.....	17.72	23.28	41.0	43.0
Kaslo	18.4	18.5	3.1	40.0	44.0
Kelowna	9.65	13.6	16.75	40.0	44.0
Ladysmith	4.0	26.0	1.0	31.0	36.0
Merritt	5.0	25.0	20.0	50.0	45.0
Nanaimo	4.63	25.65	16.72	47.0	47.0
Nelson	4.0	17.0	10.0	31.0	35.0
New Westminster	.....	19.7	30.3	50.0	50.0
North Vancouver	1.0	16.62	20.38	38.0	38.0
Port Alberni	.....	19.0	36.0	55.0	50.0
Port Coquitlam	7.67	10.83	32.5	51.0	51.0
Port Moody	17.0	5.75	12.25	35.0	35.0
Prince George	3.3	22.2	29.5	55.0	55.0
Prince Rupert	19.0	11.0	20.0	50.0	44.0
Revelstoke	9.0	20.0	9.0	38.0	38.0
Rossland	5.0	33.0	7.0	45.0	45.0
Salmon Arm	8.5	13.5	10.0	32.0	32.0
Slocan	20.0	23.0	14.0	57.0	57.0
Trail	12.8	16.7	7.5	37.0	37.6
Vancouver	13.757	9.118	8.791	31.666	31.666
Vernon	16.4	12.7	10.9	40.0	40.0
Victoria	7.5739	12.3042	18.1219	38.0	39.0

II.—TAX LEVY, 1927—*Continued.*

Districts.

Municipality.	General.	School.	Debt.	Total.	Total Levy Previous Year.
Burnaby	12.13	20.95	16.92	50.0	46.0
Chilliwhack	8.85	13.188	1.962	24.0	22.71
Coldstream	13.5	5.2	11.3	30.0	30.9
Coquitlam	8.0 (15)	7.0	4.0	19.0 (26)	19.0 (26)
Delta	6.0 (15)	5.8	5.6	17.4 (26.4)	16.63 (25.63)
Esquimalt	16.0	9.0	.....	25.0	26.5
Fraser Mills	9.0	.....	.....	9.0	9.0
Glenmore	6.0	2.0	.....	8.0	8.0
Kent	10.0 (35)	9.0	.....	19.0 (43)	18.0 (43)
Langley	13.0 (40)	10.0	.....	23.0 (50)	20.75 (50)
Maple Ridge	12.0 (30)	12.0	.....	24.0 (42)	24.0 (42)
Matsqui	10.0 (30)	10.0	.....	20.0 (40)	20.0 (40)
Mission	16.0	10.0	.....	26.0 (30)	26.0
North Cowichan	9.0 (20)	7.5	1.5	18.0 (28)	24.0 (42.5)
North Vancouver	10.32	11.3	20.38	42.0	42.0
Oak Bay	11.6	12.6	3.8	28.0	31.0
Peachland	15.0	15.0	15.0	45.0	37.0
Penticton	18.0	21.0	6.0	45.0	45.0
Pitt Meadows	12.0 (25)	7.5	2.0	21.5 (34.5)	23.0 (34.1)
Point Grey	15.51 (21.51)	14.23	14.26	44.0 (50)	44.0 (50)
Richmond	8.7	6.0	2.8	17.5	17.5
Saanich	11.09	6.06	12.85	30.0	25.0
Salmon Arm	10.0 (20)	14.0	5.0	29.0 (39)	32.0 (39.25)
South Vancouver	6.18	25.99	17.83	50.0	50.0
Spallumcheen	3.5	11.0	3.0	17.5	18.0
Sumas	15.0	8.0	.....	23.0	22.0
Summerland	2.0	12.0	16.0	30.0	30.0
Surrey	14.0 (30)	10.0	1.0	25.0 (41)	24.5 (40.5)
Tadanac	21.0	14.0	4.6	39.6	38.6
West Vancouver	2.99	19.66	22.35	45.0	40.0

Villages.

Abbotsford	13.0	.....	.....	13.0	13.0
Burns Lake	10.0	.....	.....	10.0	10.0
Creston	12.0	.....	.....	12.0	12.0
Mission	15.5	.....	.....	15.5	15.5
Smithers	12.0	.....	.....	12.0	12.0
Vanderhoof	14.0	.....	.....	14.0	10.0

Bracketed figures represent tax on wild land.

Revelstoke	.....	565,500 00	18,710	584,210 00
Rossland	.....	57,500 00	17,500	75,000 00
Salmon Arm	000 00	154,700 00	1,830	156,530 00
Slocan	.....	600 00	.....	600 00
Trail	800 00	589,260 29	53,425	642,685 29
Vancouver	000 00	36,641,545 47‡	885,360	37,526,905 47‡
Vernon	600 00	951,638 60	2,080	953,718 60
Victoria	700 00	16,944,718 22	2,338,505§	19,283,223 22
Totals	$ 350 00	$ 75,274,167 87	$ 3,571,414	$ 78,845,581 87

Burnaby	$ 000 00	$ 1,893,185 36	$ 181,072	$ 2,074,257 36
Chilliwhack	.....	68,333 33	16,200	84,533 33
Coldstream	.....	145,600 00	.....	145,600 00
Coquitlam	.....	98,250 00	7,560	105,810 00
Delta	.....	508,896 75	1,150	510,046 75
Esquimalt	000 00	432,000 00	5,000	437,000 00
Fraser Mills	.....	.....	.....	.....
Glenmore	.....	.....	.....	.....
Kent	.....	20,000 00	.....	20,000 00
Langley	900 00	17,956 60	2,935	20,891 60
Maple Ridge	.....	.....	44,210	44,210 00
Matsqui	700 00	2,053 40	13,423	15,476 40
Mission	.....	.....	5,845	5,845 00
North Cowichan	.....	39,700 00	550	40,250 00
North Vancouver	500 00	1,814,002 40	113,623	1,927,625 40
Oak Bay	150 00	981,308 18	8,996	990,304 18
Peachland	.....	40,500 00	4,552	45,052 00
Penticton	050 00	1,031,550 00	30,008	1,061,558 00
Pitt Meadows	.....	16,500 00	1,806	18,306 00
Point Grey	000 00	9,160,624 36	2,098,764‖	11,259,388 36
Richmond	.....	752,021 50	15,466	767,487 50
Saanich	000 00	1,180,934 31	5,621	1,186,555 31
Salmon Arm	.....	40,150 00	.....	40,150 00
South Vancouver	445 00	7,459,636 38	122,315	7,581,951 38
Spallumcheen	.....	86,500 00	.....	86,500 00
Sumas	.....	.....	.....	.....
Summerland	.....	576,300 00	1,884	578,184 00
Surrey	.....	29,651 84	2,600	32,251 84
Tadanac	.....	30,105 60	.....	30,105 60
West Vancouver	000 00	1,153,300 00	7,671	1,160,971 00
Totals	$ 945 00	$ 27,579,060 01	$ 2,691,251	$ 30,270,311 01
Cities forward	350 00	75,274,167 87	3,571,414	78,845,581 87
Cities and districts	$ 295 00	$102,853,227 88	$ 6,262,665	$109,115,892 88

* " City of Greenwood Relief Act, ouver Water District.

§ Includes Treasury Certificates, $

III.—LIABILITIES OF DECEMBER 31st, 1926.

Cities.

Municipality.	Debentures.											Grand Total.
	Schools.	Streets and Bridges.	Other Non-revenue producing.	Domestic Water.	Electric Light.	Sewers Revenue-producing.	Other Revenue-producing.	Local Improvements.	Better Housing.	Total Debenture Debt.	Sundry Outstanding Debts, exclusive of Shortage in Sinking Fund.	
Alberni			$ 8,000 00	$ 25,900 00	$ 10,000 00					$ 43,900 00	$ 1,320	$ 45,220 00
Armstrong	$ 37,900 00	$ 15,000 00	16,500 00	43,000 00	79,250 00			$ 8,540 61		200,190 61	520	200,710 61
Chilliwack	29,000 00	75,500 00	50,400 00					137,891 48		292,791 48		292,791 48
Courtenay	30,000 00		1,100 00	110,000 00	39,900 00		$ 1,500 00		$ 29,550 00	212,050 00	570	212,620 00
Cranbrook	51,150 30	32,186 00	124,000 00	156,300 60	60,000 00				13,300 00	436,936 90	10,262	447,198 90
Cumberland									5,350 00	5,350 00		5,350 00
Duncan	26,300 00		18,200 00	75,000 00	65,000 00			20,100 00	2,800 00	207,400 00		207,400 00
Enderby	27,500 00		21,500 00	22,500 00	28,000 00			18,500 00		118,000 00	5,185	123,185 00
Fernie	72,000 00		70,000 00	119,000 00	69,000 00	$ 95,000 00				425,000 00	54,020	479,020 00
Grand Forks	20,000 00		55,000 00	16,500 00						91,500 00		91,500 00
Greenwood			57,072 25*							57,072 25*		57,072 25*
Kamloops	116,500 00	15,000 00	139,300 00	292,000 00	610,500 00	112,000 00		3,692 50	61,150 00	1,350,142 50	7,650	1,357,792 50
Kaslo	15,500 00		5,000 00	1,500 00	31,000 00					53,000 00		53,000 00
Kelowna	61,500 00	19,000 00	188,000 00				240,500 00†	47,309 00	27,600 00	583,909 00		583,909 00
Ladysmith					25,000 00	60,000 00		7,750 00		92,750 00	7,910	100,660 00
Merritt	18,000 00		20,000 00	80,000 00	25,000 00					143,000 00	14,250	157,250 00
Nanaimo	65,000 00	50,000 00	31,000 00	355,000 00		230,000 00		290,024 90	46,300 00	1,067,324 90	4,600	1,071,924 90
Nelson	155,000 00	60,000 00	50,000 00	7,500 00	140,000 00	7,500 00	131,000 00	55,576 28	20,800 00	627,376 28	2,900	630,276 28
New Westminster	420,386 82	1,180,653 66	1,722,433 99	1,047,133 35	192,540 02		45,000 00	1,078,419 81	71,600 00	5,758,167 65	55,000	5,813,167 65
North Vancouver	575,730 00	326,500 00	1,154,571 00	625,500 00			281,000 00	1,003,719 22	69,600 00	4,036,620 22		4,036,620 22
Port Alberni	5,000 00	19,000 00		128,500 00	27,000 00				11,400 00	190,900 00	1,900	192,800 00
Port Coquitlam	35,000 00	237,500 00	125,000 00	100,000 00					13,700 00	511,200 00	64,787	575,987 00
Port Moody			143,000 00	74,500 00				28,649 73		246,149 73	15,600	261,749 73
Prince George	47,000 00	49,000 00	25,500 00	129,000 00	79,000 00				58,500 00	388,000 00	4,280	392,280 00
Prince Rupert	218,462 67	196,235 58	125,826 89	424,885 92	227,278 27		42,640 17	917,044 27	77,600 00	2,229,973 77	3,250	2,233,223 77
Rev[redacted]	39,000 00	113,000 00	26,000 00	64,500 00	261,000 00*			62,000 00		565,500 00	18,710	584,210 00
Rossland	24,500 00		5,000 00	28,000 00						57,500 00	17,500	75,000 00
Salmon Arm	14,000 00			85,000 00	42,000 00		5,700 00	5,000 00	3,000 00	154,700 00	1,830	156,530 00
Slocan			600 00							600 00		600 00
Trail	128,780 00	63,500 00	65,000 00	218,900 00				97,280 29	15,800 00	589,260 29	53,425	642,685 29
Vancouver	4,806,900 00	8,662,600 00	11,160,800 00	6,499,351 20‡				5,281,894 27	230,000 00	36,641,545 47‡	885,360	37,526,905 47‡
Vernon	42,500 00	57,500 00	99,000 00	282,500 00	245,000 00			202,538 60	22,600 00	951,638 60	2,080	953,718 60
Victoria	1,354,948 76	780,000 00	3,847,486 33	4,127,032 10		538,026 67		6,150,524 36	146,700 00	16,944,718 22	2,338,505§	19,283,223 22
Totals	$ 8,437,558 55	$11,952,175 24	$19,355,290 46	$15,139,003 17	$2,256,468 29	$ 1,042,526 67	$ 747,340 17	$15,416,455 32	$ 927,350 00	$ 75,274,167 87	$ 3,571,414	$ 78,845,581 87

Districts.

Burnaby	$ 438,813 67	$ 895,707 72	$ 78,500 00	$ 453,163 97					$ 27,000 00	$ 1,893,185 36	$ 181,072	$ 2,074,257 36
Chilliwhack	23,333 33	30,000 00	15,000 00							68,333 33	16,200	84,533 33
Coldstream	3,000 00	3,500 00	20,000 00	105,000 00	$ 14,100 00					145,600 00		145,600 00
Coquitlam		82,500 00						$ 15,750 00		98,250 00	7,560	105,810 00
Delta	40,000 00	100,000 00	15,000 00	225,000 00			$ 128,896 75			508,896 75	1,150	510,046 75
Esquimalt	12,000 00					$ 400,000 00			20,000 00	432,000 00	5,000	437,000 00
Fraser Mills												
Glenmore												
Kent								20,000 00		20,000 00		20,000 00
Langley								9,056 60	8,900 00	17,956 60	2,935	20,891 60
Maple Ridge											44,210	44,210 00
Matsqui								353 40	1,700 00	2,053 40	13,423	15,476 40
Mission											5,845	5,845 00
North Cowichan	4,700 00	35,000 00								39,700 00	550	40,250 00
North Vancouver	127,780 00	657,453 00	398,447 00	431,725 00				129,097 40	69,500 00	1,814,002 40	113,623	1,927,625 40
Oak Bay	108,400 00		92,400 00	189,000 00		408,500 00		158,558 18	24,450 00	981,308 18	8,996	990,304 18
Peachland	1,000 00	5,200 00	6,000 00	9,500 00	18,800 00					40,500 00	4,552	45,052 00
Penticton	165,000 00	42,000 00	46,000 00	223,000 00	186,000 00		342,000 00	10,500 00	17,050 00	1,031,550 00	30,008	1,061,558 00
Pitt Meadows		16,500 00								16,500 00	1,806	18,306 00
Point Grey	1,413,631 66	2,387,935 15	444,506 66	1,434,998 40		1,896,352 61		1,509,199 88	74,000 00	9,160,624 36	2,098,764‖	11,259,388 36
Richmond	28,000 00	270,000 00		365,000 00				89,021 50		752,021 50	15,466	767,487 50
Saanich		450,000 00	25,000 00	599,400 00				57,534 31	49,000 00	1,180,934 31	5,621	1,186,555 31
Salmon Arm	12,750 00	11,100 00	16,300 00							40,150 00		40,150 00
South Vancouver	1,056,644 10	3,436,186 40	1,496,000 00	1,013,050 00				362,310 88	95,445 00	7,459,636 38	122,315	7,581,951 38
Spallumcheen	35,900 00		40,000 00					10,600 00		86,500 00		86,500 00
Sumas												
Summerland	33,800 00	24,000 00	21,000 00	463,500 00	34,000 00					576,300 00	1,884	578,184 00
Surrey	28,700 00							951 84		29,651 84	2,600	32,251 84
Tadanac	30,105 60									30,105 60		30,105 60
West Vancouver	100,300 00	380,000 00	306,000 00	142,000 00			196,000 00		29,000 00	1,153,300 00	7,671	1,160,971 00
Totals	$ 3,663,858 36	$ 8,827,082 27	$ 3,020,153 66	$ 5,654,337 37	$ 252,900 00	$ 2,704,852 61	$ 666,896 75	$ 2,372,933 99	$ 416,045 00	$ 27,579,060 01	$ 2,691,251	$ 30,270,311 01
Cities forward	8,437,558 55	11,952,175 24	19,355,290 46	15,139,003 17	2,256,468 29	1,042,526 67	747,340 17	15,416,455 32	927,350 00	75,274,167 87	3,571,414	78,845,581 87
Cities and districts	$12,101,416 91	$20,779,257 51	$22,375,444 12	$20,793,340 54	$2,509,368 29	$ 3,747,379 28	$ 1,414,236 92	$17,789,389 31	$ 1,343,395 00	$102,853,227 88	$ 6,262,665	$109,115,892 88

* "City of Greenwood Relief Act, 1921" (Second Session). † Waterworks and electric light combined. ‡ $3,728,970 of this amount has been assumed by the Greater Vancouver Water District.
§ Includes Treasury Certificates, $897,505.27 issued against debentures hypothecated. ‖ Includes borrowings pending sale of debentures, $1,761,980.

IV.—SINKING FUNDS AS OF DECEMBER 31st, 1926.

Cities.

Municipality.	Cash.	Invested.	Total.	Sinking Fund required.	Short.	Over.	Condition at End of Previous Year.	
							Short.	Over.
Alberni	$ 332 74	$ 21,014 85	$ 21,347 59	$ 19,967 90		$ 1,379 69		$ 821 75
Armstrong	1,400 86	81,764 64	83,165 50	82,058 03		1,107 47		423 90
Chilliwack	102 62	85,983 27	86,085 89	75,425 90		10,659 99		8,904 46
Courtenay	2,407 72	26,163 90	28,571 62	27,257 95		1,313 67		1,570 42
Cranbrook	697 06	68,426 77	69,123 83	61,142 40		7,981 43		8,810 67
Cumberland								
Duncan	21,339 14	50,066 56	71,405 70	71,405 70				
Enderby	6,423 33	39,500 32	45,923 65	53,368 84	$ 7,445 19		$ 8,175 44	
Fernie	14,705 41	159,701 13	174,406 54	174,356 59		49 95	1,049 20	
Grand Forks	1,533 50	11,713 20	13,246 70	23,768 03	10,521 33		11,115 20	
Greenwood				57,072 25†				
Kamloops	42,286 07	453,235 86	495,521 93	554,844 59	59,322 66		62,581 82	
Kaslo	5,251 10	25,000 00	30,251 10	26,370 69		3,880 41		2,410 31
Kelowna	24,308 80	222,926 89	247,235 69	236,387 40		10,848 29		8,938 56
Ladysmith	7,494 95	43,604 60	51,099 55	57,272 29	6,172 74		5,083 88	
Merritt	246 19	40,180 36	40,426 55	40,465 38	38 83			320 71
Nanaimo	3,137 41	489,176 67	492,314 08	462,524 25		29,789 83		13,920 63
Nelson	32,225 29	301,880 14	334,105 43	298,529 48		35,575 95		25,048 17
New Westminster	26,475 29	682,281 12	708,756 41	759,040 45	50,284 04		44,066 53	
North Vancouver	85,353 90	971,725 82	1,057,079 72	1,022,406 09		34,673 63		42,758 56
Port Alberni	5,504 74	20,742 81	26,247 55	24,881 07		1,366 48		699 60
Port Coquitlam	22,019 46	47,626 76	69,646 22	145,492 17	75,845 95		74,639 85	
Port Moody	5,728 66	34,634 67	40,363 33	36,679 64		3,683 69	372 32	
Prince George	3,317 16	150,805 03	154,122 19	178,021 44	23,899 25		40,445 08	
Prince Rupert	5,671 74	23,638 55	29,310 29	28,488 58		821 71		64 34
Revelstoke	80,052 64	144,373 00	224,425 64	223,930 02		495 62		830 31
Rossland	8,400 58	2,000 00	10,400 58	10,400 58				
Salmon Arm	223 59	38,546 96	38,770 55	44,123 20	5,352 65		4,219 60	
Slocan								
Trail	2,292 50	129,453 06	131,745 56	130,161 74		1,583 82		8,573 67
Vancouver	193,010 45	8,660,187 21	8,853,197 66*	10,324,728 13*	1,471,530 47		1,626,468 62	
Vernon	45,914 15	468,174 56	514,088 71	515,382 48	1,293 77			3,468 71
Victoria	57,392 51	2,307,090 46	2,364,482 97	2,386,951 70	22,468 73		67,634 89	
Totals	$ 705,249 56	$15,801,619 17	$16,506,868 73	$18,152,904 96	$1,734,175 61	$145,211 63	$1,945,852 43	$127,564 77

† Sinking funds were all applied on debentures in accordance with the provisions of the "City of Greenwood Relief Act, 1921" (Second Session).
* $836,980.78 is applicable to the Greater Vancouver Water District.

IV.—SINKING FUNDS AS OF DECEMBER 31ST, 1926—*Continued.*

DISTRICTS.

Municipality.	Cash.	Invested.	Total.	Sinking Fund required.	Short.	Over.	Condition at End of Previous Year.	
							Short.	Over.
Burnaby	$ 168,288 87	$ 23,629 20	$ 191,918 07	$ 191,918 07				
Chilliwhack	5,091 24	22,274 52	27,365 76	24,646 97		$ 2,718 79		$ 1,959 78
Coldstream	1,703 86	47,830 95	49,534 81	49,508 54		26 27		618 71
Coquitlam	9,767 80	30,329 70	40,097 50	40,097 50				
Delta	24,970 90	152,289 26	177,260 16	160,143 95		17,116 21		11,973 18
Esquimalt	1,422 12	58,416 35	59,838 47	55,384 56		4,453 91		3,244 71
Fraser Mills								
Glenmore								
Kent	4,508 45	1,000 00	5,508 45	5,508 45				
Langley								
Maple Ridge								
Matsqui								
Mission								
North Cowichan	654 18	13,853 40	14,507 58	13,846 31		661 27		408 15
North Vancouver	596 86	298,955 60	299,552 46	259,845 13		39,707 33		46,995 23
Oak Bay	2,845 70	393,112 29	395,957 99	349,901 42		46,056 57		44,730 50
Peachland	1,256 25	21,554 60	22,810 85	25,199 12	$ 2,388 27		$ 1,202 41	
Penticton	5,362 56	232,230 55	237,593 11	207,537 75		30,055 36		24,352 74
Pitt Meadows								
Point Grey	24,740 70	1,109,792 85	1,134,533 55	1,133,459 31		1,074 24	3,462 64	
Richmond	17,263 12	172,121 13	189,384 25	163,472 81		25,911 44		10,906 18
Saanich	1,083 63	583,693 04	584,776 67	549,985 64		34,791 03		31,355 19
Salmon Arm	3,284 26	5,820 19	9,104 45	9,104 45			1,920 18	
South Vancouver	137,148 42	655,489 52	792,637 94	960,834 60	168,196 66		208,303 65	
Spallumcheen	221 92	32,904 50	33,126 42	32,659 53		466 89		370 75
Sumas								
Summerland	13,244 50	156,303 20	169,547 70	166,879 84		2,667 86		1,692 15
Surrey	3,228 01	9,986 60	13,214 61	12,866 48		348 13		167 99
Tadanac								
West Vancouver	9,441 37	248,934 57	258,375 94	239,228 66		19,147 28		31,469 64
Totals	$ 436,124 72	$ 4,270,522 02	$ 4,706,646 74	$ 4,652,029 09	$ 170,584 93	$225,202 58	$ 214,958 88	$210,244 90
Cities forward	705,249 56	15,801,619 17	16,506,868 73	18,152,904 96	1,734,175 61	145,211 63	1,945,852 43	127,564 77
Cities and districts	$ 1,141,374 28	$20,072,141 19	$21,213,515 47	$22,804,934 05	$1,904,760 54	$370,414 21	$2,160,811 31	$337,809 67

V.—ARREARS OF TAXES.

The following is a comparative statement of outstanding arrears of taxes, 1918–1926:—

CITIES.

Municipality.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
Alberni	$ 53,737	$ 21,805	$ 6,856	$ 11,797	$ 11,915	$ 9,005	$ 4,231	$ 4,144	$ 4,029
Armstrong	18,404	7,568	3,186	4,338	4,896	7,212	4,666	5,167	4,423
Chilliwack	23,131	13,463	8,538	11,694	8,475	7,224	8,903	9,308	9,090
Courtenay	9,412	10,090	5,798	6,705	12,129	9,282	7,248	6,325	5,920
Cranbrook	31,523	28,265	28,198	19,208	16,771	15,407	13,345	10,667	12,536
Cumberland	12,654	1,970	1,392	1,070	1,250	1,215	1,158	1,058	888
Duncan	11,998	9,336	8,527	5,990	5,925	5,090	4,722	5,345	4,923
Enderby	8,628	8,863	9,451	10,532	6,624	9,560	5,942	8,752	5,652
Fernie	65,741	24,471	14,362	14,045	15,205	12,713	21,453	20,723	21,928
Grand Forks	47,877	25,660	13,697	10,968	11,116	12,821	13,038	10,161	9,768
Greenwood	30,773	35,538	42,339	6,647	7,481	7,072	6,780	4,811	5,216
Kamloops	119,385	86,025	65,576	53,969	36,133	34,249	25,610	25,789	24,428
Kaslo	4,132	4,123	3,046	2,907	3,953	3,977	4,079	3,731	3,910
Kelowna	38,217	32,173	16,675	15,894	18,323	15,701	15,640	15,294	12,165
Ladysmith	18,544	16,001	31,793	9,025	4,909	5,427	3,086	3,491	3,564
Merritt	20,640	21,008	11,161	11,228	14,195	13,012	9,731	7,530	8,048
Nanaimo	163,150	137,071	80,295	84,849	71,137	51,915	94,462	91,744	25,498
Nelson	87,402	33,464	35,502	26,881	22,189	17,870	20,842	22,235	16,452
New Westminster	369,432	294,815	188,684	119,460	102,002	130,695	130,544	96,725	68,851
North Vancouver	570,896	342,980	247,830	157,613	155,768	143,454	134,742	139,152	97,501
Port Alberni	51,109	12,942	6,355	7,236	16,471	23,670	7,283	6,488	5,702
Port Coquitlam	201,267	135,713	62,213	59,163	36,610	38,237	36,931	14,540	13,712
Port Moody	75,045	33,316	20,395	18,135	13,596	10,242	9,318	14,315	14,642
Prince George	170,697	70,175	69,002	76,552	99,436	113,880	111,992	113,182	219,411
Prince Rupert	196,250	172,741	184,610	174,987	176,560	161,706	210,916	196,110	223,009
Revelstoke	43,512	41,813	30,189	25,264	22,707	26,572	18,840	20,594	21,473
Rossland	22,934	17,907	12,411	13,803	14,333	14,208	13,453	13,699	12,174
Salmon Arm	11,923	9,199	7,897	5,223	6,052	8,872	9,682	9,236	8,075
Slocan	5,449	5,936	5,948	5,926	2,847	2,350	1,725	1,184	1,454
Trail	10,168	8,068	5,742	7,314	8,613	8,290	4,956	5,959	5,181
Vancouver	5,456,453	5,216,455	3,817,632	2,900,902	2,427,519	2,022,305	1,726,251	1,372,319	1,098,545
Vernon	174,945	148,108	127,083	107,157	82,887	35,432	44,119	50,577	31,476
Victoria	3,428,632	2,960,911	1,919,852	1,616,628	1,318,168	1,125,554	1,015,971	891,831	761,208
Totals	$11,545,060	$9,987,973	$7,092,235	$5,603,110	$4,756,195	$4,104,219	$3,741,659	$3,202,186	$2,760,852

V.—ARREARS OF TAXES— Districts.

Municipality.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
Burnaby	$ 496,024	$ 301,081	$ 136,998	$ 141,696	$ 149,011	$ 167,745	$ 152,167	$ 149,905	$ 154,363
Chilliwhack	11,351	8,313	20,521	25,520	29,314	26,900	13,008	27,541	11,602
Coldstream	8,232	2,444	6,244	6,651	6,616	4,095	4,292	5,342	6,694
Coquitlam	88,735	69,155	19,881	9,426	13,254	17,541	20,419	20,062	19,131
Delta	15,857	12,959	5,605	9,607	11,717	11,714	7,568	6,590	6,631
Esquimalt	33,037	29,504	19,346	17,962	22,026	23,534	25,830	23,026	22,618
Fraser Mills	.....	.....	.....	.....	.....	.....	.....	.....	.....
Glenmore	.....	.....	.....	.....	.....	3,523	3,600	983	2,052
Kent	7,143	2,645	2,142	7,962	3,232	11,996	14,659	18,180	16,579
Langley	27,044	19,858	15,583	19,698	22,885	21,607	27,286	29,693	26,314
Maple Ridge	23,678	6,968	9,710	14,105	15,602	16,206	17,600	16,577	15,486
Matsqui	19,140	11,928	12,292	20,897	23,122	20,618	23,084	19,339	21,029
Mission	23,471	15,564	14,113	16,054	18,330	16,346	18,229	16,431	17,439
North Cowichan	20,016	16,307	19,896	22,271	15,437	14,733	14,538	15,366	18,085
North Vancouver	202,866	221,337	137,732	112,181	107,715	128,479	145,792	162,411	131,382
Oak Bay	123,037	89,981	52,025	37,843	28,020	39,952	57,728	31,673	22,886
Peachland	4,006	5,300	2,953	4,045	6,561	7,730	8,896	7,359	8,164
Penticton	43,412	35,708	34,537	27,294	28,045	39,499	33,710	25,336	25,775
Pitt Meadows	10,325	1,115	4,454	6,246	6,567	6,273	6,297	8,513	11,965
Point Grey	417,869	346,042	236,031	233,149	134,469	152,745	240,296	173,648	173,175
Richmond	69,477	64,493	50,735	63,008	71,426	69,795	70,943	69,194	66,550
Saanich	105,184	100,303	68,301	66,430	61,978	58,309	59,289	61,173	40,890
Salmon Arm	10,521	9,012	12,634	13,530	17,767	16,839	20,229	10,003	11,635
South Vancouver	1,113,877	550,547	300,298	321,575	368,710	396,780	393,087	297,012	234,125
Spallumcheen	39,340	24,450	17,134	10,462	16,819	20,438	10,821	9,912	7,848
Sumas	3,637	1,459	1,778	2,165	2,756	3,471	4,382	5,205	5,811
Summerland	20,154	17,752	12,816	14,462	19,841	28,118	21,307	17,660	15,002
Surrey	46,292	39,856	23,454	28,089	42,761	46,596	33,787	33,388	31,322
Tadanac	.....	.....	.....	.....	.....	.....	63	14	108
West Vancouver	95,911	93,829	103,587	108,697	57,826	73,877	84,018	56,243	44,413
Totals	$3,079,636	$2,097,910	$1,340,800	$1,361,025	$1,301,807	$1,445,460	$1,532,925	$1,317,779	$1,169,074

Villages.

Abbotsford	.....	.....	.....	.....	.....	.....	$ 449	$ 537	$ 240
Burns Lake	.....	.....	.....	.....	.....	.....	127	224	286
Creston	.....	.....	.....	.....	.....	.....	481	663	395
Mission	.....	.....	.....	.....	.....	$ 1,765	1,755	3,419	3,988
Smithers	.....	.....	.....	.....	.....	1,807	1,219	3,398	1,687
Vanderhoof	.....	.....	.....	.....	.....	.....	.....	.....	422
Totals	.....	.....	.....	.....	.....	$ 3,572	$ 4,031	$ 8,241	$ 7,018
Cities forward	$11,545,060	$ 9,987,973	$7,092,235	$5,603,110	$4,756,195	4,104,219	3,741,659	3,202,186	2,760,852
Districts forward	3,079,636	2,097,910	1,340,800	1,361,025	1,301,807	1,445,460	1,532,925	1,317,779	1,169,074
Cities, districts, and villages	$14,624,696	$12,085,983	$8,433,035	$6,964,135	$6,058,002	$5,553,251	$5,278,615	$4,528,206	$3,936,944

VI.—TAX SALE LANDS, DECEMBER 31ST, 1926.

CITIES.

Alberni	$ 125,190 67
Armstrong	4,936 99
Chilliwack	13,453 07
Courtenay	10,627 66
Cranbrook	5,346 95
Cumberland	.....
Duncan	448 38
Enderby	7,133 29
Fernie	9,516 95
Grand Forks	76,894 06
Greenwood	78,878 14
Kamloops	44,893 56
Kaslo	15,700 01
Kelowna	22,002 69
Ladysmith	11,000 00
Merritt	42,168 33
Nanaimo	70,279 79
Nelson	30,965 43
New Westminster	264,666 66
North Vancouver	414,214 40
Port Alberni	83,001 69
Port Coquitlam	396,313 81
Port Moody	104,634 44
Prince George	105,221 48
Prince Rupert	103,243 33
Revelstoke	89,230 37
Rossland	.....
Salmon Arm	7,680 28
Slocan	8,160 00
Trail	1,875 78
Vancouver	1,006,084 97
Vernon	143,047 71
Victoria	1,590,464 64
Total	$4,887,275 43

DISTRICTS.

Burnaby	$ 897,332 61
Chilliwhack	195 67
Coldstream	193 28
Coquitlam	57,918 15
Delta	8,193 16
Esquimalt	32,275 69
Fraser Mills	.....
Glenmore	1,116 70
Kent	.....
Langley	.....
Maple Ridge	3,584 02
Matsqui	6,212 37
Mission	5,023 67
North Cowichan	14,689 36
North Vancouver	323,389 80
Oak Bay	25,881 95
Peachland	10,069 78
Penticton	55,459 14
Pitt Meadows	2,110 86
Point Grey	99,870 20
Richmond	37,000 51
Saanich	75,167 12
Salmon Arm	9,748 89
South Vancouver	1,379,486 05
Spallumcheen	3,027 46
Sumas	375 99
Summerland	15,481 90
Surrey	70,000 00
Tadanac	.....
West Vancouver	213,572 44
Total	$3,347,376 77

VILLAGES.

Abbotsford	$ 200 00
Burns Lake	.....
Creston	.....
Mission	570 82
Smithers	.....
Vanderhoof	.....
Total	$ 770 82
Cities forward	4,887,275 43
Districts forward	3,347,376 77
Cities, districts, and villages	$8,235,423 02

NOTE.—Figures represent the upset price at which property was taken over by the municipality.

VII.—TAXES LEVIED, 1926.

Cities.

Alberni	$ 9,617 52
Armstrong	24,152 16
Chilliwack	48,950 60
Courtenay	21,195 02
Cranbrook	64,896 05
Cumberland	8,208 49
Duncan	23,610 44
Enderby	18,175 26
Fernie	70,055 08
Grand Forks	27,796 26
Greenwood	6,736 96
Kamloops	135,102 69
Kaslo	6,050 77
Kelowna	108,794 73
Ladysmith	18,285 79
Merritt	24,929 58
Nanaimo	135,628 61
Nelson	102,488 57
New Westminster	541,129 26
North Vancouver	359,914 50
Port Alberni	24,003 95
Port Coquitlam	65,142 67
Port Moody	48,886 83
Prince George	71,824 72
Prince Rupert	326,676 39
Revelstoke	71,947 31
Rossland	33,170 61
Salmon Arm	23,223 51
Slocan	3,455 61
Trail	76,728 25
Vancouver	5,649,340 07
Vernon	135,327 14
Victoria	1,690,910 37
Total	$9,976,355 77

Districts.

Burnaby	$ 574,021 65
Chilliwhack	79,253 33
Coldstream	28,271 06
Coquitlam	34,397 74
Delta	113,998 79
Esquimalt	97,890 80
Fraser Mills	4,168 41
Glenmore	4,863 11
Kent	20,231 95
Langley	79,460 66
Maple Ridge	58,100 43
Matsqui	47,232 61
Mission	54,530 00
North Cowichan	53,312 06
North Vancouver	265,380 74
Oak Bay	174,661 79
Peachland	10,575 33
Penticton	114,623 89
Pitt Meadows	20,071 64
Point Grey	1,100,730 80
Richmond	125,930 41
Saanich	209,385 82
Salmon Arm	32,846 48
South Vancouver	983,317 26
Spallumcheen	38,906 29
Sumas	20,430 84
Summerland	35,720 62
Surrey	114,719 08
Tadanac	66,825 49
West Vancouver	125,969 83
Total	$4,689,828 91

Villages.

Abbotsford	$ 2,376 66
Burns Lake	721 10
Creston	2,918 39
Mission	10,188 59
Smithers	4,420 96
Vanderhoof	1,089 77
Total	$ 21,715 47
Cities forward	9,976,355 77
Districts forward	4,689,828 91
Cities, districts, and villages	$14,687,900 15

	455 00		4,462 64	144,074 05
Coldstream	227 46	4,978 28	2,505 33	39,504 32
Coquitlam	092 72	2,227 88	2,624 46	54,673 89
Delta	427 20	11,829 37	10,940 37	161,575 06
Esquimalt	230 00		7,882 21	130,648 14
Fraser Mills	344 31		40 26	8,262 84
Glenmore	120 42		3,315 62	11,027 72
Kent	490 60		877 40	34,258 10
Langley	462 00		9,360 96	130,580 14
Maple Ridge	784 00		9,820 99	118,988 98
Matsqui	007 00		10,040 72	88,183 92
Mission	561 00		4,040 82	80,795 41
North Cowichan	332 20		2,034 95	73,449 13
North Vancouver	394 80	17,603 10	143,878 58	463,533 84
Oak Bay	007 00	36,310 42	15,341 66	263,061 48
Peachland	223 45	5,031 06	503 40	20,471 10
Penticton	784 00	99,184 34	20,612 45	278,960 39
Pitt Meadows	188 21		1,075 81	24,565 49
Point Grey	920 00	140,089 86	221,336 96	1,712,762 59
Richmond	327 50	35,891 91	7,891 65	235,564 31
Saanich	129 00	73,622 06	65,832 56	460,135 18
Salmon Arm	895 50		7,372 04	55,079 02
South Vancouver	272 00	132,970 90	94,009 65	1,511,299 08
Spallumcheen	810 38		2,121 10	63,299 18
Sumas	267 60		2,416 39	33,586 37
Summerland	589 93	54,588 72	5,296 71	121,445 45
Surrey	153 00		14,581 38	199,172 50
Tadanac	86 97		283 50	66,654 16
West Vancouver	007 00	99,764 41	31,750 98	311,860 37
Totals	929 61	$ 790,318 55	$ 813,647 67	$ 7,728,430 87

Abbotsford	151 19	$ 653 73	$ 374 34	$ 7,514 01
Burns Lake	66 45		1,039 66	2,854 18
Creston	190 00		22 95	6,553 11
Mission	112 55		1,826 08	19,215 61
Smithers	305 51		5,466 18	14,345 99
Vanderhoof	144 95		5 00	2,775 71
Totals	970 65	$ 653 73	$ 8,734 21	$ 53,258 61
Cities forward	278 05	2,924,646 26	1,049,184 73	16,632,272 66
Districts forward	929 61	790,318 55	813,647 67	7,728,430 87
Cities, districts, and villages	478 31	$3,715,618 54	$1,871,566 61	$24,413,962 14

NOTE.—The figures subm[illegible] the classification of expenditures is not uniform in the different municipalities, a[illegible]d may be taken as substantially correct. Items which are of the nature of cross-en[illegible]

VIII.—RECEIPTS, 1926—Cities.

Municipality	Land-taxes received.	Trade Licences.	Road-taxes.	Poll-tax.	Dog-tax.	Fines.	Government Grant for Schools.	Government Grant from Liquor Profits.	Government Grant, Motor Licences.	Government Grant, Pari Mutuel.	Receipts from Public Utilities.	Sundry Receipts.	Total.
Alberni	$ 8,434 56	$ 379 00	$ 44 00	$ 160 00	$ 54 00	$ 204 00	$ 2,260 00	$ 1,487 90	$ 687 09	$ 312 20	$ 8,729 08	$ 4,491 80	$ 27,243 63
Armstrong	25,702 02	1,243 00	4 00	255 00	104 00	119 00	3,771 03	2,380 78	964 89	438 41	24,325 76	304 48	59,612 37
Chilliwack	54,861 06	2,896 73	354 00	781 90	433 75	1,789 42	9,880 00	4,611 14	1,734 43	788 09	.....	8,338 70	86,469 22
Courtenay	21,136 07	2,324 00	172 00	400 00	142 00	714 00	7,175 50	3,491 01	795 07	361 26	34,934 73	3,750 21	75,395 85
Cranbrook	64,695 41	4,720 00	.....	1,625 00	266 25	4,543 50	13,996 65	9,974 97	2,674 78	1,215 35	69,683 81	6,535 96	179,931 68
Cumberland	8,490 50	1,267 00	.....	2,580 00	77 00	1,207 50	25,267 45	6,098 39	1,023 78	465 17	.....	669 16	47,145 95
Duncan	24,292 90	3,897 25	200 00	770 00	286 00	.....	11,327 49	2,700 08	1,156 29	525 39	24,202 36	4,504 52	73,862 28
Enderby	22,837 33	480 00	.....	120 00	82 00	4 00	2,612 35	1,484 81	768 57	349 22	8,551 74	2,709 69	39,999 71
Fernie	73,571 22	5,019 00	672 00	1,981 00	654 00	3,351 50	14,170 00	10,567 62	4,262 95	1,936 98	55,051 83	8,736 16	179,974 26
Grand Forks	30,966 00	1,872 00	86 00	.....	60 50	810 85	7,024 95	5,269 57	1,441 93	655 17	26,193 05	4,074 27	78,454 29
Greenwood	4,544 02	209 50	.....	.....	22 00	.....	4,095 00	1,072 51	364 16	165 47	5,060 69	2,332 15	17,865 50
Kamloops	145,517 18	3,867 00	1,123 10	2,783 50	575 00	5,079 00	16,772 21	11,481 94	4,418 05	2,007 44	240,936 55	18,227 57	452,788 54
Kaslo	16,327 35	440 00	4 00	190 00	110 00	.....	3,251 65	1,558 41	932 49	423 70	14,320 01	1,290 57	38,848 18
Kelowna	111,923 83	3,105 00	420 00	1,190 00	147 00	1,449 05	11,822 00	6,885 44	2,473 55	1,123 92	88,174 88	15,545 40	244,340 07
Ladysmith	27,832 62	2,163 00	226 00	1,020 60	162 00	667 00	10,072 15	5,265 58	1,930 75	877 29	18,184 06	1,919 93	70,320 98
Merritt	24,735 67	2,007 50	.....	1,037 47	320 00	437 20	6,066 65	4,710 52	1,689 28	767 56	25,333 98	5,805 06	72,910 89
Nanaimo	152,812 53	8,580 00	106 00	4,260 00	590 00	5,295 70	18,856 85	8,834 62	8,713 40	3,959 14	39,740 45	24,184 38	275,933 07
Nelson	112,202 31	6,050 00	814 00	2,676 50	715 00	3,834 29	19,547 73	13,231 00	5,133 61	2,332 58	176,353 54	32,938 25	375,828 81
New Westminster	526,754 18	13,609 57	2,012 90	6,484 75	965 00	12,004 15	48,949 68	35,431 24	14,227 85	6,464 77	271,380 28	148,034 27	1,086,318 64
North Vancouver	395,862 90	7,615 31	.....	1,970 00	1,173 25	1,824 00	26,446 63	19,920 94	7,510 97	3,412 80	274,446 85	117,806 40	857,990 05
Port Alberni	25,078 85	1,031 00	378 80	739 50	253 25	1,005 00	5,226 25	3,124 05	1,036 54	470 97	30,223 43	6,639 69	75,207 33
Port Coquitlam	53,043 52	1,395 50	340 00	790 00	252 00	1,391 65	4,596 80	3,166 86	2,108 41	958 01	4,790 07	7,163 24	79,996 06
Port Moody	42,537 88	960 00	714 00	2,026 85	152 00	978 50	5,989 22	1,419 47	1,011 01	459 38	7,974 98	8,131 63	72,354 92
Prince George	63,385 66	4,197 00	392 00	270 00	291 00	3,615 50	6,326 65	4,737 62	2,015 17	915 64	40,523 81	2,033 67	128,703 72
Prince Rupert	306,397 57	7,050 00	.....	3,236 26	819 00	12,176 85	16,007 58	9,604 56	6,275 17	2,851 28	181,027 79	20,159 76	565,605 82
Revelstoke	58,481 62	1,276 00	403 80	.....	495 00	1,344 50	11,942 74	9,019 91	2,730 73	1,240 77	60,199 15	6,003 68	153,137 90
Rossland	32,398 50	1,652 50	344 45	927 10	194 98	2,710 25	8,667 23	6,058 69	2,058 35	935 26	10,753 24	15,090 64	81,791 19
Salmon Arm	25,362 57	952 35	.....	.....	30 00	443 50	5,085 00	1,137 08	615 44	279 64	12,034 57	8,383 43	54,323 58
Slocan	3,251 37	75 00	.....	80 30	.....	.....	1,815 25	638 84	311 16	141 38	636 85	321 44	7,271 59
Trail	98,348 31	6,601 25	3,233 00	7,655 00	345 00	7,931 85	18,590 00	11,556 53	2,964 34	1,346 92	31,571 04	8,922 97	199,066 21
Vancouver	5,431,003 95	358,132 75	.....	97,304 63	3,991 00	208,024 34	314,140 51	243,274 10	115,056 66	52,278 79	651,267 21	280,256 22	7,754,730 16
Vernon	164,264 57	2,873 00	248 00	375 00	506 00	974 00	16,730 24	10,717 39	3,617 08	1,545 86	90,270 94	6,542 33	298,664 41
Victoria	1,781,038 14	110,461 00	6,990 00	12,956 45	3,888 50	20,733 48	97,171 39	66,554 72	38,013 25	17,272 24	397,769 53	267,337 10	2,820,185 80
Totals	$ 9,938,092 17	$568,402 21	$ 19,282 05	$156,646 81	$ 18,236 48	$304,663 58	$ 775,654 83	$527,468 29	$240,717 20	$109,278 05	$2,924,646 26	$1,049,184 73	$16,632,272 66

Districts.

Burnaby	$ 488,603 07	$ 5,682 50	$ 740 80	$ 3,363 92	$ 2,397 50	$ 4,754 07	$ 75,890 23	$ 43,527 12	$ 12,635 75	$ 5,741 36	$ 76,226 24	$ 111,396 12	$ 830,958 68
Chilliwhack	97,427 74	977 50	554 50	1,207 50	360 30	490 75	19,365 08	11,376 38	5,398 64	2,453 00	.....	4,462 64	144,074 03
Coldstream	28,044 64	10 00	266 00	378 00	.....	2 50	1,740 00	851 51	500 60	227 46	4,978 28	2,505 33	39,504 32
Coquitlam	32,040 80	565 00	555 00	1,226 02	75 00	826 07	8,402 17	2,633 93	2,404 84	1,092 72	2,227 88	2,624 46	54,673 89
Delta	111,622 98	1,355 00	886 00	1,480 00	98 00	1,109 75	14,021 12	3,664 25	3,141 02	1,427 20	11,829 37	10,940 37	161,575 06
Esquimalt	93,020 27	1,022 00	476 00	805 00	484 00	1,350 45	12,378 20	6,092 16	4,907 85	2,230 00	.....	7,882 21	130,648 14
Fraser Mills	4,168 41	116 50	.....	2,215 00	10 00	35 00	.....	575 59	757 77	344 31	.....	40 26	8,262 84
Glenmore	5,716 85	10 00	.....	391 00	42 00	.....	632 50	534 31	265 02	120 42	.....	3,315 62	11,027 72
Kent	22,716 15	945 00	.....	385 00	.....	764 48	4,862 80	2,136 94	1,079 73	490 60	.....	877 40	34,258 10
Langley	70,500 00	2,777 50	172 00	380 00	598 00	2,804 00	21,301 70	15,297 70	3,926 28	3,462 00	.....	9,360 96	130,580 14
Maple Ridge	60,215 57	3,639 50	1,995 75	4,165 25	246 00	3,816 30	20,912 43	8,466 91	3,926 28	1,784 00	.....	9,820 99	118,988 98
Matsqui	47,165 44	820 00	465 00	1,097 77	.....	.....	14,303 59	7,867 34	4,417 06	2,007 00	.....	10,040 72	88,183 92
Mission	51,817 81	75 00	561 55	1,034 50	95 00	79 00	14,649 93	3,445 30	3,435 50	1,561 00	.....	4,040 82	80,795 41
North Cowichan	51,770 97	822 50	1,272 00	2,710 00	872 00	228 50	4,640 00	4,834 06	2,931 95	1,332 20	.....	2,034 95	73,449 13
North Vancouver	262,155 64	2,289 00	1,910 33	4,063 20	626 25	2,396 95	14,067 05	9,118 98	3,729 96	1,694 80	17,603 10	143,878 58	463,533 84
Oak Bay	176,678 83	1,185 00	70 00	895 00	786 00	625 00	15,243 00	9,502 50	4,417 07	2,007 00	36,310 42	15,341 66	263,061 48
Peachland	10,836 18	115 00	.....	60 00	85 70	2 25	2,320 00	802 30	491 76	223 45	5,031 06	503 40	20,471 10
Penticton	118,434 02	3,988 25	4 00	845 00	569 00	1,861 60	18,560 00	9,191 45	3,926 28	1,784 00	99,184 34	20,612 45	278,960 39
Pitt Meadows	17,639 45	200 00	104 00	165 00	.....	5 00	3,512 17	1,261 62	414 23	188 21	.....	1,075 81	24,565 49
Point Grey	1,157,055 07	7,407 50	671 94	2,442 94	1,708 00	5,097 00	91,732 13	56,669 80	19,631 39	8,920 00	140,089 86	221,336 96	1,712,762 59
Richmond	125,183 89	15,236 00	1,727 00	3,780 00	414 00	3,513 50	20,551 40	12,139 61	4,907 85	4,327 50	35,891 91	7,891 65	235,564 31
Saanich	235,979 86	1,451 00	890 00	2,310 64	1,146 75	1,604 00	37,531 16	23,350 10	11,288 05	5,129 00	73,622 06	65,832 56	460,135 18
Salmon Arm	32,577 58	194 75	.....	.....	.....	14 50	5,183 77	3,669 21	4,171 67	1,895 50	.....	7,372 04	55,079 02
South Vancouver	919,120 50	11,093 00	4,669 40	12,998 50	5,799 00	4,886 00	182,635 38	97,434 52	31,410 23	14,272 00	132,970 90	94,009 65	1,511,299 08
Spallumcheen	41,585 84	20 00	.....	76 50	.....	34 00	12,872 30	3,995 54	1,783 52	810 38	.....	2,121 10	63,299 18
Sumas	20,633 60	.....	394 00	880 00	193 00	1,520 50	4,501 30	2,191 04	588 94	267 60	.....	2,416 39	33,586 37
Summerland	40,640 90	1,272 50	.....	436 00	288 80	62 75	9,463 13	6,002 87	1,803 14	1,589 93	54,588 72	5,296 71	121,445 45
Surrey	113,936 63	4,670 00	1,168 60	2,974 55	740 00	5,501 00	33,211 35	14,537 35	5,398 64	2,453 00	.....	14,581 38	199,172 50
Tadanac	64,813 27	.....	.....	335 00	.....	404 00	.....	540 02	191 40	86 97	.....	283 50	66,654 16
West Vancouver	145,193 70	1,827 50	.....	1,162 37	212 00	1,031 00	16,366 20	8,128 15	4,417 06	2,007 00	99,764 41	31,750 98	311,860 37
Totals	$ 4,647,295 66	$ 69,767 50	$ 19,553 87	$ 54,263 66	$ 17,846 30	$ 44,819 92	$ 680,850 09	$369,838 56	$148,299 48	$ 71,929 61	$ 790,318 55	$ 813,647 67	$ 7,728,430 87

Villages.

Abbotsford	$ 2,843 65	$ 1,175 00	.....	$ 170 00	$ 49 50	.....	.....	$ 1,763 85	$ 332 75	$ 151 19	$ 653 73	$ 374 34	$ 7,514 01
Burns Lake	657 84	283 00	.....	.....	18 00	.....	.....	642 98	146 25	66 45	.....	1,039 66	2,854 18
Creston	3,213 83	707 50	.....	.....	66 00	.....	.....	1,934 68	418 15	190 00	.....	22 95	6,553 11
Mission	10,235 82	1,981 80	10 00	25 00	143 00	.....	.....	3,673 41	907 95	412 55	.....	1,826 08	19,215 61
Smithers	5,017 62	645 00	.....	170 00	155 00	.....	.....	1,914 31	672 37	305 51	.....	5,466 18	14,345 99
Vanderhoof	957 20	250 00	.....	.....	72 00	.....	.....	1,027 54	319 02	144 95	.....	5 00	2,775 71
Totals	$ 22,925 96	$ 5,042 30	$ 10 00	$ 365 00	$ 503 50	.....	.....	$ 10,956 77	$ 2,796 49	$ 1,270 65	$ 653 73	$ 8,734 21	$ 53,258 61
Cities forward	9,938,092 17	568,402 21	19,282 05	156,646 81	18,236 48	$304,663 58	$ 775,654 83	527,468 29	240,717 20	109,278 05	2,924,646 26	1,049,184 73	16,632,272 66
Districts forward	4,647,295 66	69,767 50	19,553 87	54,263 66	17,846 30	44,819 92	680,850 09	369,838 56	148,299 48	71,929 61	790,318 55	813,647 67	7,728,430 87
Cities, districts, and villages	$14,608,313 79	$643,212 01	$ 38,845 92	$211,275 47	$ 36,586 28	$349,483 50	$1,456,504 92	$908,263 62	$391,813 17	$182,478 31	$3,715,618 54	$1,871,566 61	$24,413,962 14

Note.—The figures submitted under the headings of "Receipts" and "Expenditures" are prepared very largely from an analysis of the auditors' reports, and although the classification of expenditures is not uniform in the different municipalities, and it is in many cases extremely difficult to make a distribution of the items, yet the statements have been prepared with a good deal of care and may be taken as substantially correct. Items which are of the nature of cross-entries, deposit accounts, and trust accounts, which would have the effect of inflating the figures, have as far as possible been eliminated.

Esquimalt	230 00	1,700 00	9,035 57	.....	9,007 40	122,085 28
Fraser Mills	75 00	.....	426 82	.....	572 64	9,209 61
Glenmore	80 50	500 00	912 37	.....	3,140 40	11,391 52
Kent	285 00	600 00	1,368 28	.....	3,404 72	40,642 13
Langley	036 06	2,225 00	4,571 48	.....	7,834 72	126,112 69
Maple Ridge	309 41	1,325 00	7,617 79	.....	11,403 54	115,455 57
Matsqui	303 28	1,500 00	3,944 90	.....	9,445 62	83,222 15
Mission	100 00	1,225 00	2,796 28	.....	7,299 81	80,026 80
North Cowich	720 00	751 75	4,413 92	.....	13,526 39	69,649 50
North Vancou	165 00	2,550 00	22,505 24	30,418 40	50,620 19	415,398 89
Oak Bay	000 00	.....	9,848 15	32,942 24	24,123 00	240,820 63
Peachland	.....	.....	1,893 57	5,275 42	2,878 73	20,653 24
Penticton	085 00	1,625 00	7,571 56	110,495 95	42,005 05	275,431 79
Pitt Meadows	100 00	800 00	1,925 06	.....	5,830 57	25,246 26
Point Grey	850 00	4,100 00	52,792 23	220,403 89	221,341 99	1,689,919 60
Richmond	049 87	2,500 00	6,758 22	39,597 56	8,987 36	237,064 28
Saanich	969 00	2,200 00	23,181 44	79,843 76	75,303 21	450,721 55
Salmon Arm	050 00	1,225 00	4,130 70	.....	16,011 65	51,616 38
South Vancou	834 51	4,100 00	43,447 64	148,015 02	60,879 02	1,499,944 83
Spallumcheen	130 00	1,000 00	2,392 71	.....	2,909 56	60,313 62
Sumas	125 00	1,050 00	2,782 34	.....	3,078 19	31,432 94
Summerland	364 10	800 00	6,917 74	71,778 47	2,909 74	124,534 09
Surrey	450 00	2,500 00	12,274 16	.....	33,146 47	207,953 73
Tadanac	.....	.....	1,379 40	.....	20,231 94	63,410 27
West Vancou	360 00	2,200 00	10,939 47	122,880 03	7,403 33	302,323 11
Totals	893 24	$ 43,851 75	$304,829 60	$1,002,806 75	$ 727,862 31	$ 7,517,198 25

Abbotsford	50 00	$ 200 00	$ 1,106 93	.....	$ 5,758 25	$ 10,148 79
Burns Lake	.....	.....	555 81	.....	1,472 80	2,647 63
Creston	50 00	.....	849 94	.....	2,351 52	6,821 81
Mission	110 00	300 00	1,508 00	.....	3,921 46	17,129 35
Smithers	100 00	300 00	2,169 96	.....	6,189 61	13,768 07
Vanderhoof	.....	.....	434 40	.....	180 30	2,452 67
Totals	310 00	$ 800 00	$ 6,625 04	.....	$ 19,873 94	$ 52,968 32
Cities fo	078 90	55,978 14	528,955 57	$2,737,421 59	1,589,623 11	16,223,127 82
Districts	893 24	43,851 75	304,829 60	1,002,806 75	727,862 31	7,517,198 25
Cities, di	282 14	$100,629 89	$840,410 21	$3,740,228 34	$2,337,359 36	$23,793,294 39

IX.—EXPENDITURES, 1926—Cities.

Municipality.	Interest on Debentures, exclusive of Schools and Public Utilities.	Sinking Fund and Instalments of Principal on Debentures, exclusive of Schools and Public Utilities.	Roads and Streets.	Street-lighting.	Parks.	Sewers.	Fire-protection.	Public Health.	Administration of Justice.	Schools, including Interest and Sinking Fund Payments.	Interest on Temporary Loans.	Donations and Grants.	Council Salaries.	Salaries and Office Expenses.	Public Utilities including Interest and Sinking Fund.	Sundry Expenditures.	Total.
Alberni	$ 480 00	$ 297 75	$ 1,928 02	$ 458 25	$ 30 75	.....	$ 1,801 96	$ 100 00	$ 662 01	$ 7,205 92	.....	$ 100 00	$ 480 00	$ 2,361 94	$ 10,411 83	$ 1,473 45	$ 27,791 88
Armstrong	2,347 44	1,484 75	1,391 26	2,500 00	341 12	.....	509 17	170 80	1,835 05	17,602 14	$ 451 80	852 00	200 00	2,687 30	22,964 14	4,071 03	59,408 00
Chilliwack	13,138 78	7,502 13	7,171 21	2,557 41	.....	$ 980 98	2,360 53	150 00	3,327 16	32,056 03	435 05	778 60	700 00	4,467 30	.....	2,880 81	78,505 99
Courtenay	.....	.....	13,109 07	700 00	.....	.....	2,382 94	335 55	2,468 60	21,166 60	32 27	125 00	546 00	2,744 38	29,275 57	2,710 12	75,596 10
Cranbrook	7,387 68	4,989 26	12,290 60	1,658 49	.....	1,810 92	10,793 07	1,145 95	8,402 67	52,477 97	573 28	1,260 38	.....	5,436 71	59,269 12	7,698 61	175,194 71
Cumberland	.....	.....	3,003 91	653 00	.....	64 52	558 66	122 10	2,391 62	35,198 34	.....	143 28	412 00	1,868 59	.....	3,376 82	47,792 84
Duncan	2,038 00	1,843 86	5,193 32	1,808 14	.....	.....	966 74	71 25	784 43	21,387 40	215 97	400 00	700 00	3,847 27	23,250 55	10,975 47	73,482 40
Enderby	2,399 92	1,343 29	1,042 97	1,043 20	28 90	.....	1 60	305 37	960 38	10,879 46	365 66	105 00	.....	2,134 94	12,361 91	5,612 56	38,585 16
Fernie	8,250 00	3,819 93	31,904 39	192 39	.....	505 70	6,479 97	803 44	8,469 00	62,193 58	2,880 62	2,804 60	1,210 00	4,265 23	35,540 84	18,000 37	187,320 06
Grand Forks	4,050 00	2,079 20	2,467 93	637 15	411 94	.....	1,039 55	256 45	2,870 80	24,686 40	.....	575 00	1,000 00	4,489 64	18,597 94	11,857 89	75,019 89
Greenwood	2,000 00	.....	386 45	673 37	.....	.....	71 60	.....	377 00	5,273 95	.....	.....	.....	1,620 93	5,352 73	1,900 13	17,656 16
Kamloops	12,181 68	7,163 08	30,110 74	6,800 00	3,405 36	935 06	14,801 89	1,314 24	12,616 62	74,568 26	275 03	6,186 24	2,300 00	10,660 61	209,287 79	36,456 15	429,062 75
Kaslo	300 00	436 15	5,321 62	1,200 00	503 90	.....	828 98	100 00	500 70	12,557 48	51 93	516 35	.....	2,877 85	11,435 61	1,774 73	38,405 30
Kelowna	13,645 78	9,729 50	15,223 07	1,494 45	3,375 72	5,205 51	8,662 35	300 00	7,369 97	48,180 42	2,040 74	3,395 70	1,995 00	7,756 77	87,663 68	13,814 61	229,853 27
Ladysmith	4,288 55	2,262 85	2,079 80	1,200 00	.....	233 51	1,391 72	120 00	3,130 27	27,099 66	682 47	150 00	650 00	3,116 75	17,959 67	5,619 47	69,984 72
Merritt	900 00	748 42	1,152 97	6,000 00	.....	.....	542 05	125 00	2,820 82	21,556 29	440 45	125 00	300 00	2,180 24	27,670 63	7,769 60	72,331 47
Nanaimo	32,608 70	17,964 90	20,037 56	7,002 05	682 01	4,286 65	8,840 36	1,972 65	10,902 98	85,970 69	205 80	2,500 00	2,787 46	10,543 39	39,826 73	26,907 99	273,039 92
Nelson	9,531 70	6,219 97	32,524 28	5,682 55	3,909 19	5,676 38	15,691 62	2,395 24	8,803 47	95,170 81	362 07	2,215 43	2,020 00	15,409 78	147,239 70	39,442 61	392,294 80
New Westminster	201,025 89	76,766 08	85,725 16	6,526 54	13,746 46	1,093 52	50,096 98	4,799 50	24,707 20	250,420 93	6,940 54	16,629 55	4,800 00	26,067 83	173,856 06	91,263 58	1,034,465 82
North Vancouver	111,981 40	76,879 22	49,436 97	8,489 16	12,709 61	517 91	27,794 42	2,594 12	18,725 04	162,922 95	2,579 91	6,702 50	3,000 00	26,785 10	278,867 17	37,005 83	826,991 31
Port Alberni	790 00	1,181 23	3,254 43	3,500 00	.....	.....	1,748 97	175 00	3,592 19	17,773 01	126 75	96 75	.....	3,854 24	35,030 21	3,085 63	74,208 41
Port Coquitlam	21,250 00	8,447 16	4,362 78	1,512 00	.....	.....	58 28	.....	2,140 76	16,790 95	1,888 37	.....	.....	4,862 11	10,346 77	4,409 95	76,069 13
Port Moody	10,258 00	11,224 09	2,335 30	1,511 24	550 15	.....	362 39	358 50	2,599 24	15,582 45	1,374 11	100 00	.....	3,698 78	13,084 06	11,601 00	74,839 31
Prince George	7,290 00	5,565 83	3,653 96	.....	.....	.....	3,251 63	917 69	7,971 27	29,181 78	806 17	400 00	600 00	8,555 66	50,102 89	6,375 45	124,672 33
Prince Rupert	72,976 00	72,384 03	50,182 95	6,781 95	1,536 94	4,083 27	18,507 75	1,081 25	16,064 01	87,802 85	3,843 67	1,750 00	3,862 50	23,394 06	185,764 69	62,065 53	612,081 45
Revelstoke	13,787 50	18,413 18	3,002 02	572 48	1,407 49	3,095 02	4,516 41	947 40	7,171 29	46,625 37	1,583 27	778 11	500 00	3,059 50	55,839 29	10,331 47	171,629 80
Rossland	300 00	436 15	7,327 86	2,449 55	46 20	.....	5,896 56	1,811 10	2,917 45	35,273 28	1,369 54	25 00	.....	3,915 06	7,854 68	4,658 79	74,281 22
Salmon Arm	566 00	567 02	4,547 68	.....	11 80	.....	498 98	109 15	243 40	16,474 66	412 40	640 00	1,000 00	4,461 52	16,485 62	2,495 43	48,513 66
Slocan	.....	600 00	472 28	.....	.....	.....	.....	.....	25 00	4,863 69	.....	50 00	.....	669 65	194 44	256 85	7,131 91
Trail	11,819 82	9,530 31	15,232 32	1,653 14	2,064 98	386 74	7,698 50	1,951 15	7,848 69	83,835 33	272 20	777 00	1,200 00	10,007 85	25,571 51	15,963 23	195,812 77
Vancouver	1,021,109 99	403,205 16	750,959 39	109,290 52	152,342 42	177,503 54	492,592 26	69,271 43	640,635 48	1,796,439 59	29,598 07	88,432 78	14,600 00	234,240 30	659,518 42	773,434 30	7,413,173 65
Vernon	17,304 72	10,968 66	15,344 38	2,500 00	2,846 52	2,116 62	10,856 72	1,599 82	8,411 63	63,869 12	996 69	4,613 38	1,750 00	6,767 22*	91,442 44	51,568 72	292,956 64
Victoria	511,850 61	318,057 98	172,174 06	48,684 07	38,997 15	46,679 05	161,896 83	12,595 33	99,946 11	596,183 41	17,427 06	32,851 25	9,365 18	80,147 07	375,354 90	312,764 93	2,834,974 99
Totals	$2,117,858 16	$1,082,111 14	$1,354,550 71	$235,731 10	$238,948 61	$255,174 90	$ 863,501 44	$107,999 48	$ 921,692 31	$3,879,270 77	$ 78,231 89	$176,078 90	$ 55,978 14	$528,955 57	$2,737,421 59	$1,589,623 11	$16,223,127 82

* Civic salaries charged to the various departments.

Districts.

Burnaby	$ 48,879 31	$ 75,766 83	$ 72,135 01	$ 17,916 24	.....	$ 22,225 38	$ 2,747 44	$ 2,033 57	$ 31,099 25	$ 297,987 74	$ 18,646 09	$ 2,135 00	$ 2,875 00	$ 42,041 30	$ 84,068 61	$ 45,012 66	$ 765,569 43
Chilliwhack	2,550 00	3,835 86	28,791 83	.....	.....	.....	.....	133 90	2,707 52	60,146 54	1,316 22	1,400 00	1,300 00	4,297 56	.....	32,882 63	139,362 06
Coldstream	192 50	295 00	5,878 87	.....	.....	.....	.....	.....	205 10	6,025 87	756 23	298 62	.....	4,264 32	19,349 10	1,054 43	38,320 04
Coquitlam	4,200 00	1,487 63	14,153 56	693 00	.....	.....	136 82	75 00	1,064 26	21,052 97	494 52	440 00	1,900 00	3,262 09	5,473 95	4,212 35	58,646 15
Delta	14,184 94	13,534 04	42,437 30	418 41	.....	.....	.....	318 75	2,202 20	44,370 24	1,299 70	1,847 89	1,300 00	5,137 29	32,264 35	1,405 00	160,720 11
Esquimalt	20,000 00	3,546 20	16,726 80	1,482 15	$ 1,506 30	4,840 39	1,706 26	752 70	7,112 21	42,191 45	1,247 85	1,230 00	1,700 00	9,035 57	.....	9,007 40	122,085 28
Fraser Mills	.....	.....	2,447 77	240 00	.....	100 00	100 00	.....	1,369 40	3,877 98	.....	75 00	.....	426 82	.....	572 64	9,209 61
Glenmore	.....	.....	4,424 30	.....	.....	.....	.....	.....	5 30	2,328 65	.....	80 50	500 00	912 37	.....	3,140 40	11,391 52
Kent	1,200 00	816 85	19,565 27	327 50	.....	.....	.....	.....	185 10	12,757 83	131 58	285 00	600 00	1,368 28	.....	3,404 72	40,642 13
Langley	633 89	1,075 91	48,110 60	216 00	.....	.....	.....	588 00	4,582 30	54,720 35	518 38	1,036 06	2,225 00	4,571 48	.....	7,834 72	126,112 69
Maple Ridge	.....	.....	29,920 24	756 00	.....	.....	229 70	250 00	4,111 89	58,158 16	1,073 84	609 41	1,325 00	7,617 79	.....	11,403 54	115,455 57
Matsqui	.....	.....	28,790 63	.....	.....	.....	.....	150 00	505 00	36,767 26	1,515 46	603 28	1,500 00	3,944 90	.....	9,445 62	83,222 15
Mission	.....	.....	23,442 24	551 42	.....	.....	60 00	.....	695 60	43,053 89	502 56	400 00	1,225 00	2,796 28	.....	7,299 81	80,026 80
North Cowichan	1,750 00	1,471 36	18,663 54	.....	.....	.....	.....	166 97	2,573 11	25,425 64	186 82	720 00	751 75	4,413 92	.....	13,526 39	69,649 50
North Vancouver	70,801 37	15,897 14	115,408 62	5,096 38	2,469 03	.....	7,767 85	832 56	12,501 93	70,807 06	7,258 12	465 00	2,550 00	22,505 24	30,418 40	50,620 19	415,398 89
Oak Bay	36,009 63	16,143 25	17,564 31	2,974 60	1,179 21	3,119 35	9,860 00	1,498 60	9,026 53	73,499 58	32 18	3,000 00	.....	9,848 15	32,942 24	24,123 00	240,820 63
Peachland	722 00	376 09	939 93	1,778 00	.....	.....	111 95	151 60	158 42	5,749 78	617 75	.....	.....	1,893 57	5,275 42	2,878 73	20,653 24
Penticton	5,280 00	2,338 55	13,142 08	4,000 00	526 57	.....	8,602 87	491 15	5,179 18	70,667 68	2,421 15	1,085 00	1,625 00	7,571 56	110,495 95	42,005 05	275,431 79
Pitt Meadows	.....	.....	5,300 47	.....	.....	.....	.....	50 00	233 70	10,697 67	308 79	100 00	800 00	1,925 06	.....	5,830 57	25,246 26
Point Grey	232,980 34	62,607 64	101,085 46	43,869 25	20,726 46	117,424 62	73,179 50	1,399 95	43,648 63	468,672 44	16,837 20	8,850 00	4,100 00	52,792 23	220,403 89	221,341 99	1,689,919 60
Richmond	17,052 30	7,959 93	84,013 65	.....	.....	.....	799 04	432 76	7,735 33	58,548 15	730 11	1,949 87	2,500 00	6,758 22	39,597 56	8,987 36	237,064 28
Saanich	30,009 38	22,936 05	56,599 31	1,715 07	2,940 01	.....	3,583 52	8,004 90	9,715 71	130,770 34	1,949 85	1,969 00	2,200 00	23,181 44	79,843 76	75,303 21	450,721 55
Salmon Arm	1,345 23	779 03	11,785 21	.....	.....	.....	.....	.....	376 25	14,246 77	666 54	1,050 00	1,225 00	4,130 70	.....	16,011 65	51,616 38
South Vancouver	244,071 56	42,002 06	160,993 89	23,264 92	11,176 75	47,104 61	38,162 81	5,159 66	36,245 13	623,660 07	7,827 18	3,834 51	4,100 00	43,447 64	148,015 02	60,879 02	1,499,944 83
Spallumcheen	2,703 00	1,095 83	6,060 25	.....	.....	.....	.....	120 00	206 60	39,122 02	573 65	4,130 00	1,000 00	2,392 71	.....	2,909 56	60,313 62
Sumas	.....	.....	11,852 55	.....	.....	.....	.....	100 00	1,475 18	10,812 56	157 12	125 00	1,050 00	2,782 34	.....	3,078 19	31,432 94
Summerland	2,450 00	1,759 69	4,136 34	530 25	93 98	.....	27 40	52 05	724 20	30,990 13	.....	1,364 10	800 00	6,917 74	71,778 47	2,909 74	124,534 09
Surrey	57 15	175 74	62,472 79	740 00	.....	.....	.....	983 47	9,941 78	82,977 07	2,235 10	450 00	2,500 00	12,274 16	.....	33,146 47	207,953 73
Tadanac	.....	.....	5,997 05	843 56	.....	.....	2,105 59	.....	2,275 60	30,577 13	.....	.....	.....	1,379 40	.....	20,231 94	63,410 27
West Vancouver	34,781 94	10,389 89	32,458 73	3,387 71	.....	.....	778 64	400 00	9,824 25	64,794 30	724 82	1,360 00	2,200 00	10,939 47	122,880 03	7,403 33	302,323 11
Totals	$ 771,854 54	$ 286,290 57	$1,045,298 60	$110,800 46	$ 40,618 31	$194,814 35	$ 149,959 39	$ 24,145 59	$ 207,686 66	$2,495,457 32	$ 70,028 81	$ 40,893 24	$ 43,851 75	$304,829 60	$1,002,806 75	$ 727,862 31	$ 7,517,198 25

Villages.

Abbotsford	.....	.....	$ 2,578 32	$ 444 89	.....	.....	.....	.....	.....	.....	$ 10 40	$ 50 00	$ 200 00	$ 1,106 93	.....	$ 5,758 25	$ 10,148 79
Burns Lake	.....	.....	344 27	.....	$ 26 35	.....	$ 248 40	.....	.....	.....	.....	.....	.....	555 81	.....	1,472 80	2,647 63
Creston	.....	.....	3,082 94	.....	.....	.....	487 41	.....	.....	.....	.....	50 00	.....	849 94	.....	2,351 52	6,821 81
Mission	.....	.....	9,109 45	1,703 01	.....	.....	477 43	.....	.....	.....	.....	110 00	300 00	1,508 00	.....	3,921 46	17,129 35
Smithers	.....	.....	4,548 39	242 83	.....	.....	217 28	.....	.....	.....	.....	100 00	300 00	2,169 96	.....	6,189 61	13,768 07
Vanderhoof	.....	.....	1,832 12	.....	.....	.....	.....	.....	.....	.....	5 85	.....	.....	434 40	.....	180 30	2,452 67
Totals	.....	.....	$ 21,495 49	$ 2,390 73	$ 26 35	.....	$ 1,430 52	.....	.....	.....	$ 16 25	$ 310 00	$ 800 00	$ 6,625 04	.....	$ 19,873 94	$ 52,968 32
Cities forward	$2,117,858 16	$1,082,111 14	1,354,550 71	235,731 10	238,948 61	$255,174 90	863,501 44	$107,999 48	$ 921,692 31	$3,879,270 77	78,231 89	176,078 90	55,978 14	528,955 57	$2,737,421 59	1,589,623 11	16,223,127 82
Districts forward	771,854 54	286,290 57	1,045,298 60	110,800 46	40,618 31	194,814 35	149,959 39	24,145 59	207,686 66	2,495,457 32	70,028 81	40,893 24	43,851 75	304,829 60	1,002,806 75	727,862 31	7,517,198 25
Cities, districts, and villages	$2,889,712 70	$1,368,401 71	$2,421,344 80	$348,922 29	$279,593 27	$449,989 25	$1,014,891 35	$132,145 07	$1,129,378 97	$6,374,728 09	$148,276 95	$217,282 14	$100,629 89	$840,410 21	$3,740,228 34	$2,337,359 36	$23,793,294 39

X.—COMPARATIVE STATEMENT OF MONEYS COLLECTED FROM PRINCIPAL SOURCES OF REVENUE, 1918–26.

Item of Revenue.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
Taxes	$10,593,177	$14,055,731	$15,467,662	$14,550,526	$14,503,825	$14,366,913	$13,718,940	$14,534,451	$14,608,313
Trade licences	153,450	320,788	407,306	464,731	537,612	577,932	605,742	629,474	643,212
Govt. grant to schools	892,109	898,897	970,164	1,186,156	1,192,453	1,292,168	1,325,567	1,352,191	1,456,504
Fines and costs	160,885	221,527	358,910	291,124	297,163	224,535	261,154	348,963	349,483

XI.—COMPARATIVE STATEMENT OF EXPENDITURES ON STREETS, FIRE, ADMINISTRATION OF JUSTICE, PUBLIC HEALTH, COUNCIL SALARIES, AND SCHOOLS, 1918–26.

Item of Expenditure.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.
Streets	$1,266,277	$1,583,288	$1,940,481	$2,226,550	$2,218,066	$2,111,076	$2,323,442	$2,567,780	$2,421,344
Fire	787,191	682,403	808,884	862,885	840,853	836,438	911,512	980,915	1,014,891
Administration of justice	600,507	743,180	942,193	1,031,443	1,039,646	1,024,482	1,033,814	1,078,483	1,129,378
Public health	200,612	196,535	170,415	135,416	128,417	127,246	132,638	142,960	132,145
Council salaries	80,940	84,721	80,881	92,029	85,503	91,119	91,707	96,424	100,629
Schools	3,154,418	3,716,626	4,482,609	5,298,063	5,591,642	5,842,510	6,043,068	6,264,785	6,374,728

XII.—MONEY BY-LAWS.

Certificates of approval were issued during 1926 for money by-laws as follows:—

Date.	Municipality.	By-law No.	Purpose.	Amount.	Term.	Rate.
1926.					Years.	Per Cent.
Jan. 20	New Westminster	568	Market	$ 45,000 00	10	5
,, 22	Kamloops	435	Local improvement	1,127 00	10	5½
Feb. 13	Port Moody	164	Port Moody Steel Works, Limited	100,000 00	10	5½
,, 15	Prince Rupert	558	Local improvement $ 4,481 49			
,, 15	Prince Rupert	559	Local improvement 4,643 93			
,, 15	Prince Rupert	560	Local improvement 11,111 00			
,, 15	Prince Rupert	561	Local improvement 2,919 92			
,, 15	Prince Rupert	562	Local improvement 1,988 08			
,, 15	Prince Rupert	563	Local improvement 11,486 35			
,, 15	Prince Rupert	564	Local improvement 9,562 37			
,, 15	Prince Rupert	565	Local improvement 18,055 80			
,, 15	Prince Rupert	566	Local improvement 6,630 66			
,, 15	Prince Rupert	567	Local improvement 12,444 80			
,, 15	Prince Rupert	568	Local improvement 6,546 48			
Mar. 6	Prince Rupert	569	Local improvement (consolidation)	89,870 88	10*	5½
Feb. 19	Point Grey	607 to 610, 612 to 614, 616 to 620, 623 to 626, 629, 631 to 633, 635 to 640 642 to 645, 647, 648 650 to 654, 657, 661, 663, 664 of 1925	Local improvement.			
April 15	Point Grey	177	Local improvement (consolidation)	49,980 74	10	5
Feb. 19	Point Grey	611, 615, 627, 628, 630, 634, 641, 646, 649, 655, 656, 659, 660, 662, 665 to 668 of 1925	Local improvement.			

* Instalments.

1926.					Years.	Per Cent.
April 15	Point Grey	178	Local improvement (consolidation)	$ $21,682 14	15	5
Feb. 27	Burnaby	491	Road	74,000 00	15	5
„ 27	Burnaby	492	Sidewalk	8,500 00	15	5
„ 27	Burnaby	493	Grandview Highway extension	26,000 00	15	5
„ 27	Burnaby	494	Fire-protection	2,500 00	2	5
Mar. 1	North Vancouver (District)	.....	Roads	80,000 00	20	5½
„ 3	Cranbrook	261	Public works equipment	15,000 00	10	5
„ 3	Cranbrook	262	Street	22,000 00	10	5
„ 3	Cranbrook	263	Sidewalks	8,000 00	10	5
„ 6	Prince Rupert	570	Road improvements	18,500 00	10	5½
„ 8	Port Moody	165	Waterworks	4,500 00	10	5½
„ 8	Esquimalt	165	School	12,000 00	20	5
„ 25	Point Grey	112	Roads	50,000 00	30	5
April 22	Point Grey	32 to 36, 38 to 42, 44 to 57, 59 to 66, 68, 70 to 96, 98, 99 of 1926	Local improvement.			
June 26	Point Grey	445	Local improvement (consolidation)	223,526 55	15	5
April 30	West Vancouver	284	Roads	65,000 00	20	5½
„ 30	West Vancouver	285	Sidewalk	35,000 00	25	5½
May 4	Port Alberni	221	Street improvement	10,000 00	10	5
„ 13	Courtenay	137	Weigh scales	1,500 00	10	5
„ 13	Courtenay	139	Park	1,100 00	20	5
„ 21	New Westminster	606	School	60,000 00	20	5
„ 22	Delta	.....	School	40,000 00	10	5
„ 28	Kelowna	433	Streets equipment	8,000 00	8	5½
June 11	Point Grey	410	Schools	243,600 00	40	5
„ 11	Point Grey	411	Street-paving	60,000 00	20	5
„ 11	Point Grey	412	Street-paving	40,000 00	20	5
„ 11	Point Grey	413	Roads and boulevards	50,000 00	40	5
„ 11	Point Grey	414	Park	52,000 00	40	5
„ 11	Point Grey	415	Fire-protection	27,000 00	10	5
„ 11	Point Grey	416	Fire-protection	18,000 00	30	5
„ 15	Trail	407	Street-paving	40,000 00	20	5
„ 19	Prince Rupert	580	Street improvement	28,000 00	5	5
„ 22	North Vancouver (City)	709	Local improvement	3,142 00	20	5½
„ 23	North Vancouver (City)	718	School	54,500 00	35	5
„ 23	North Vancouver (City)	719	Street improvement	20,000 00	20	5
„ 23	North Vancouver (City)	720	Sidewalks	5,000 00	5	5

XII.—MONEY BY-LAWS—*Continued.*

Date.	Municipality.	By-law No.	Purpose.	Amount.	Term.	Rate.
1926.					Years.	Per Cent.
June 29	Point Grey	254 to 270, 274, 275, 277 to 285, 288, 291 to 301, 303 to 311, 313 to 315, 332 to 338, 341 to 347, 349 to 351, 354, 356 to 361 of 1926	Local improvement.			
July 23	Point Grey	331	Local improvement.			
Aug. 31	Point Grey	562	Local improvement (consolidation)	$ 69,868 53	10	5
June 29	Point Grey	271 to 273, 276, 286, 287, 289, 290, 302, 312, 317 to 330, 339, 340, 348, 352, 353, 355, 362 to 377 of 1926	Local improvement.			
July 23	Point Grey	316	Local improvement.			
Aug. 31	Point Grey	563	Local improvement (consolidation)	164,536 40	15	5
July 5	Trail	406	Waterworks	60,000 00	20	5
,, 14	New Westminster	583	Waterworks	20,000 00	5	5
,, 15	Trail	414	School	23,424 00	20	5
,, 26	Merritt	141	Waterworks	35,000 00	20	5½
,, 31	Salmon Arm (City)	173	Hospital aid	4,200 00	10	6
Aug. 2	Kamloops	447	Hospital grant	25,000 00	25	5½
,, 2	Summerland	224	Irrigation	30,000 00	20	5½
,, 2	Salmon Arm (District)	197	Hospital grant	6,300 00	20	6
,, 2	South Vancouver	880	School	27,000 00	40	5½
,, 4	Armstrong	143	Waterworks	5,000 00	10	5½

1926.						Years.	Per Cent.
Aug. 4	South Vancouver	957	Sewer	$146,872 75			
,, 4	South Vancouver	958	Sewer	2,938 53			
,, 4	South Vancouver	959	Sewer	3,456 68			
,, 4	South Vancouver	960	Sewer	1,436 48			
,, 4	South Vancouver	961	Sewer	1,246 50			
,, 4	South Vancouver	962	Sewer	2,396 55			
,, 4	South Vancouver	963	Sewer	4,836 01			
Dec. 24	South Vancouver	987, 1142	Sewer (consolidation)		$ 163,183 50	30	5½
Aug. 30	Oak Bay	443	Local improvement		671 55	10	5½
,, 31	Kamloops	449	Hydro-electric plant		60,000 00	15	5½
Sept. 3	South Vancouver	964	Sidewalk	$ 572 00			
,, 3	South Vancouver	965	Sidewalk	747 01			
,, 3	South Vancouver	966	Sidewalk	1,050 00			
,, 3	South Vancouver	967	Sidewalk	363 17			
,, 3	South Vancouver	968	Sidewalk	986 44			
,, 3	South Vancouver	969	Sidewalk	1,026 63			
Dec. 24	South Vancouver	986, 1143	Sidewalks (consolidation)		4,745 25	10	5½
Sept. 13	North Vancouver (District)	.....	Park		5,000 00	20	5
,, 13	North Vancouver (District)	.....	School		2,100 00	20	5
Oct. 2	Trail	419	Local improvement—sewer		5,200 00	20	5
,, 6	North Vancouver (District)	.....	Waterworks		135,000 00	20	5
,, 6	North Vancouver (District)	.....	Waterworks		52,000 00	20	5
,, 7	Prince Rupert	600	Local improvement	$22,857 40			
,, 7	Prince Rupert	601	Local improvement	6,002 96			
,, 7	Prince Rupert	602	Local improvement	6,089 45			
,, 7	Prince Rupert	603	Local improvement	9,252 75			
,, 7	Prince Rupert	604	Local improvement	9,457 08			
,, 12	Prince Rupert	605	Local improvement (consolidation)		53,659 64	10	5
,, 13	Point Grey	625 to 627, 645 to 660, 675 to 681, 683 to 690, 692 to 700, 702 to 729, 746 to 755 of 1926	Local improvement.				
Nov. 18	Point Grey	915	Local improvement (consolidation)		74,400 40	10	6
Oct. 13	Point Grey	628 to 644, 661 to 674, 682, 691, 701, 730 to 745, 756, 757 of 1926	Local improvement.				
Nov. 18	Point Grey	914	Local improvement (consolidation)		270,608 47	15	6

XII.—MONEY BY-LAWS—*Continued.*

Date.	Municipality.	By-law No.	Purpose.	Amount.	Term.	Rate.
1926.					Years.	Per Cent.
Nov. 4	Point Grey	801	Ornamental street-lighting	$ 86,000 00	20	5
,, 10	Duncan	237	Local improvement $ 840 00			
,, 10	Duncan	238	Local improvement 735 00			
,, 10	Duncan	239	Local improvement 1,240 00			
,, 10	Duncan	240	Local improvement 510 00			
,, 10	Duncan	241	Local improvement 575 00			
,, 10	Duncan	244	Local improvement (consolidation)	3,900 00	10	5
,, 13	Vernon	488	Waterworks	12,500 00	20	5½
Dec. 16	Port Moody	181	Local improvement $ 392 91			
,, 16	Port Moody	182	Local improvement 469 88			
,, 16	Port Moody	183	Local improvement 447 68			
,, 16	Port Moody	184	Local improvement 414 19			
,, 16	Port Moody	185	Local improvement 625 75			
,, 16	Port Moody	186	Local improvement 325 86			
,, 16	Port Moody	187	Local improvement 612 38			
,, 16	Port Moody	188	Local improvement 227 80			
,, 16	Port Moody	189	Local improvement 833 28			
,, 17	Port Moody	190	Local improvement (consolidation)	4,349 73	20	5½
,, 29	Point Grey	941 to 976	Local improvement.			
1927.						
Jan. 28	Point Grey	61 (1927)	Local improvement (consolidation)	31,630 53	10	5
1926.						
Dec. 29	Point Grey	922 to 928, 930, 933, 935, 936, 938 to 940, 980 to 982 of 1926	Local improvement.			
1927.						
Jan. 28	Point Grey	60 (1927)	Local improvement (consolidation)	106,512 35	15	5
1926.						
Dec. 29	Point Grey	931, 934, 937, 977, 978, 979 of 1926	Local improvement.			
1927.						
Jan. 28	Point Grey	58 (1927)	Local improvement (consolidation)	24,890 10	30	5
1926.						
Dec. 29	Point Grey	929, 932	Local improvement.			
1927.						
Jan. 28	Point Grey	59 (1927)	Local improvement (consolidation)	150,696 52	40	5
			Total	$3,431,406 28		

XIII.—PUBLIC UTILITIES, 1926.

Electric Light—Cities.

Municipality.	Estimated Value of Plant.	Cost of Maintenance and Operation.	Payment of Interest and Sinking Fund or Instalments of Principal.	Total Operating Cost.	Year's Revenue.	Profit.	Loss.	Construction Expenditure paid from Revenue.	Profit after Deduction of Construction Costs.	Loss after Deduction of Construction Costs.
Alberni	$ 9,597	$ 5,008	$ 972	$ 5,980	$ 4,705	.....	$ 1,275	.....	.....	$ 1,275
Armstrong	74,285	10,811	5,752	16,563	17,123	$ 560	.....	.....	$ 560	.....
Courtenay	64,321	13,942	2,823	16,765	26,230	9,465	.....	.....	9,465	.....
Cranbrook	69,354	23,420	5,917	29,337	43,896	14,559	.....	$ 3,457	11,102	.....
Duncan	63,500	8,416	5,431	13,847	16,120	2,273	.....	.....	2,273	.....
Enderby	20,527	5,538	3,078	8,616	5,903	.....	2,713	142	.....	2,855
Fernie	71,450	18,675	4,968	23,643	33,570	9,927	.....	.....	9,927	.....
Grand Forks	5,500	12,150	.....	12,150	16,113	3,963	.....	.....	3,963	.....
Greenwood	1,566	3,542	.....	3,542	3,540	.....	2	1,166	.....	1,168
Kamloops	208,782	88,178	17,423	105,601	140,213	34,612	.....	.....	34,612	.....
Kaslo	23,750	5,286	2,917	8,203	10,375	2,172	.....	.....	2,172	.....
Kelowna	79,010	43,372	10,038	53,410	60,907	7,497	.....	4,843	2,654	.....
Ladysmith	33,336	16,024	1,935	17,959	18,184	225	.....	.....	225	.....
Nelson	352,083	33,157	14,946	48,103	105,249	57,146	.....	3,000	54,146	.....
New Westminster	140,284	64,707	11,209	75,916	153,387	77,471	.....	.....	77,471	.....
Port Alberni	49,301	9,843	3,920	13,763	21,312	7,549	.....	3,055	4,494	.....
Prince George	58,267	20,336	9,022	29,358	28,933	.....	425	.....	.....	425
Prince Rupert	345,846	47,705	31,409	79,114	103,722	24,608	.....	3,774	20,834	.....
Revelstoke	250,000	24,037	22,800	46,837	45,195	.....	1,642	.....	.....	1,642
Salmon Arm	39,305	5,221	3,402	8,623	6,833	.....	1,790	271	.....	2,061
Vernon	162,262	33,671	23,737	57,408	60,936	3,528	.....	.....	3,528	.....
Totals	$2,122,326	$493,039	$181,699	$674,738	$922,446	$255,555	$ 7,847	$19,708	$237,426	$ 9,426

Electric Light—Districts.

Peachland	$ 15,774	$ 2,161	$ 1,656	$ 3,817	$ 3,894	$ 77	.....	$ 143	.....	$ 66
Penticton	114,098	27,616	16,244	43,860	48,867	5,007	.....	1,456	$ 3,551	.....
Summerland	27,348	5,929	3,795	9,724	9,606	.....	118	.....	.....	118
Totals	$ 157,220	$ 35,706	$ 21,695	$ 57,401	$ 62,367	$ 5,084	$ 118	$ 1,599	$ 3,551	$ 184
Cities forward	2,122,326	493,039	181,699	674,738	922,446	255,555	7,847	19,708	237,426	9,426
Cities and districts	$2,279,546	$528,745	$203,394	$732,139	$984,813	$260,639	$ 7,965	$21,307	$240,977	$ 9,610

XIII.—PUBLIC UTILITIES, 1926—*Continued.*

WATERWORKS—CITIES.

Municipality.	Estimated Value of Plant.	Cost of Maintenance and Operation.	Payment of Interest and Sinking Fund or Instalments of Principal.	Total Operating Cost.	Year's Revenue.	Profit.	Loss.	Construction Expenditure paid from Revenue.	Profit after Deduction of Construction Costs.	Loss after Deduction of Construction Costs.
Alberni	$ 52,205	$ 1,301	$ 3,130	$ 4,431	$ 4,023	.....	$ 408	.....	.....	$ 408
Armstrong	43,355	3,738	2,662	6,400	7,202	$ 802	.....	.....	$ 802	.....
Courtenay	118,737	1,455	8,335	9,790	8,704	.....	1,086	$ 2,719	.....	3,805
Cranbrook	239,043	4,202	20,782	24,984	25,787	803	.....	1,491	.....	688
Duncan	75,000	2,250	5,992	8,242	8,081	.....	161	1,160	.....	1,321
Enderby	18,681	1,960	1,642	3,602	2,648	.....	954	.....	.....	954
Fernie	119,000	3,445	8,451	11,896	21,481	9,585	.....	.....	9,585	.....
Grand Forks	32,250	4,617	1,570	6,187	10,079	3,892	.....	260	3,632	.....
Greenwood	20,921	643	.....	643	1,520	877	.....	.....	877	.....
Kamloops	277,188	28,728	24,030	52,758	49,796	.....	2,962	.....	.....	2,962
Kaslo	29,000	1,524	220	1,744	3,944	2,200	.....	1,487	713	.....
Kelowna	104,490	15,747	10,038	25,785	27,267	1,482	.....	3,623	.....	2,141
Nanaimo	254,625	16,022	21,764	37,786	39,740	1,954	.....	2,040	.....	86
Nelson	146,730	4,570	640	5,210	32,900	27,690	.....	36,579	.....	8,889
New Westminster	412,080	27,955	69,984	97,939	117,992	20,053	.....	.....	20,053	.....
North Vancouver	617,984	7,129	30,778	37,907	31,477	.....	6,430	3,900	.....	10,330
Port Alberni	125,404	3,389	12,130	15,519	8,911	.....	6,608	2,691	.....	9,299
Port Coquitlam	43,500	3,563	6,783	10,346	4,790	.....	5,556	.....	.....	5,556
Port Moody	92,603	1,259	7,304	8,563	7,975	.....	588	4,520	.....	5,108
Prince George	91,342	4,989	14,769	19,758	11,590	.....	8,168	986	.....	9,154
Prince Rupert	444,726	25,490	38,697	64,187	34,676	.....	29,511	4,381	.....	33,892
Revelstoke	57,000	3,019	5,579	8,598	15,003	6,405	.....	402	6,003	.....
Rossland	25,000	2,404	3,669	6,073	10,753	4,680	.....	1,780	2,900	.....
Salmon Arm	62,830	577	6,886	7,463	5,201	.....	2,262	125	.....	2,387
Slocan	4,756	194	.....	194	636	442	.....	.....	442	.....
Trail	193,756	3,744	16,105	19,849	31,571	11,722	.....	5,721	6,001	.....
Vancouver	1,990,615	330,932	328,586	659,518	651,267	.....	8,251	.....	.....	8,251
Vernon	193,940	12,719	21,313	34,032	29,333	.....	4,699	.....	.....	4,699
Victoria	5,667,519	169,525	205,829	375,354	397,769	22,415	.....	.....	22,415	.....
Totals	**$11,554,280**	**$687,090**	**$877,668**	**$1,564,758**	**$1,602,116**	**$115,002**	**$ 77,644**	**$ 73,865**	**$73,423**	**$109,930**

XIII.—PUBLIC UTILITIES, 1926—*Continued.*

WATERWORKS—DISTRICTS.

Municipality.	Estimated Value of Plant.	Cost of Maintenance and Operation.	Payment of Interest and Sinking Fund or Instalments of Principal.	Total Operating Cost.	Year's Revenue.	Profit.	Loss.	Construction Expenditure paid from Revenue.	Profit after Deduction of Construction Costs.	Loss after Deduction of Construction Costs.
Burnaby	$ 857,135	$ 30,775	$ 41,278	$ 72,053	$ 76,226	$ 4,173	.....	$ 12,014	.....	$ 7,841
Coldstream	61,074	5,477	8,139	13,616	2,188	.....	$ 11,428	2,115	.....	13,543
Coquitlam	23,110	1,960	3,513	5,473	2,227	.....	3,246	.....	.....	3,246
Delta	227,941	12,807	13,791	26,598	11,829	.....	14,769	5,665	.....	20,434
North Vancouver	271,962	9,281	17,292	26,573	17,603	.....	8,970	3,844	.....	12,814
Oak Bay	147,194	14,675	14,656	29,331	36,310	6,979	.....	3,610	$ 3,369	.....
Peachland	7,063	519	794	1,313	1,136	.....	177	.....	.....	177
Penticton	187,477	6,650	15,993	22,643	22,472	.....	171	1,452	.....	1,623
Point Grey	1,454,018	65,946	78,706	144,652	140,089	.....	4,563	75,750	.....	80,313
Richmond	322,443	14,201	21,192	35,393	35,891	498	.....	4,203	.....	3,705
Saanich	619,129	33,336	42,999	76,335	73,622	.....	2,713	3,508	.....	6,221
South Vancouver	979,712	78,250	53,997	132,247	132,970	723	.....	15,767	.....	15,044
West Vancouver	91,849	10,356	11,691	22,047	16,653	.....	5,394	8,010	.....	13,404
Totals	$ 5,250,107	$284,233	$ 324,041	$ 608,274	$ 569,216	$ 12,373	$ 51,431	$135,938	$ 3,369	$178,365
Cities forward	11,554,280	687,090	877,668	1,564,758	1,602,116	115,002	77,644	73,865	73,423	109,930
Cities and districts	$16,804,387	$971,323	$1,201,709	$2,173,032	$2,171,332	$127,375	$129,075	$209,803	$76,792	$288,295

XIII.—PUBLIC UTILITIES, 1926—*Continued.*

Sundry Utilities.

Municipality.	Estimated Value of Plant.	Cost of Maintenance and Operation.	Payment of Interest and Sinking Fund or Instalments of Principal.	Total Operating Cost.	Year's Revenue.	Profit.	Loss.	Construction Expenditure paid from Revenue.	Profit after Deduction of Construction Costs.	Loss after Deduction of Construction Costs.
Water and Light.										
Merritt	$ 74,560	$ 21,036	$ 6,633	$ 27,669	$ 25,334	.....	$ 2,335	.....	.....	$ 2,335
Gas.										
Nelson	50,000	18,747	3,381	22,128	19,191	.....	2,937	.....	.....	2,937
Irrigation System.										
Penticton	233,860	16,071	25,010	41,081	27,844	.....	13,237	.....	.....	13,237
Irrigation and Domestic Water.										
Summerland	365,768	21,598	40,455	62,053	44,981	.....	17,072	.....	.....	17,072
Hydro-electric.										
Kamloops	348,452	21,257	29,668	50,925	50,925	.....	.....	.....	.....	.....
Ferries.										
North Vancouver (City)	173,497	219,024	18,034	237,058	242,969	$ 5,911	.....	.....	$ 5,911	.....
West Vancouver	118,204	64,817	17,762	82,579	83,110	531	.....	$10,242	.....	9,711
Street-railway.										
Nelson	81,000	24,987	7,228	32,215	19,012	.....	13,203	.....	.....	13,203
Telephone.										
Prince Rupert	74,009	20,810	11,458	32,268	42,628	10,360	.....	2,036	8,324	.....
Totals	$1,519,350	$428,347	$159,629	$587,976	$555,994	$ 16,802	$ 48,784	$12,278	$14,235	$58,495

BRITISH COLUMBIA MUNICIPAL OFFICIALS, 1927.

Cities.

City.	Clerk.	Treasurer.	Mayor.
Alberni	Stephens, M. M.		Hanna, L. A.
Armstrong	Fifer, A. J.		Parks, J. Z.
Chilliwack	Brown, P. J.		Ashwell, J. H.
Courtenay	Wood, C. S.		McKenzie, J. W.
Cranbrook	Burgess, F. W.		Roberts, T. M.
Cumberland	Cope, W. H.		Maxwell, A.
Duncan	Greig, J.		Mutter, J. I.
Enderby	Rosoman, G.		Hawkins, C.
Fernie	Moffatt, A. J.		Irvine, J. S.
Grand Forks	Hutton, J. A.		Love, T. A.
Greenwood	Walters, G. S.		Gulley, T. M.
Kamloops	Jackson, A. W.		Meighen, A. E.
Kaslo	Papworth, W. V.		Burgess, W. H.
Kelowna	Dunn, G. H.		Sutherland, D. W.
Ladysmith	Callin, C. G.		Jones, S.
Merritt	Gay, F. S.		Boyd, J. P.
Nanaimo	Hackwood, H.		Busby, F. A.
Nelson	Wasson, W. E.		McDonald, J. A.
New Westminster	Keary, W. H.	Bowell, A. J.	Gray, A. Wells.
North Vancouver	Archibald, R. F.	Lane, C. R.	Morden, G. H.
Port Alberni	Cronk, E. J.		Sanders, A. T.
Port Coquitlam	Smith, J.		Galer, R. C.
Port Moody	Lye, J. J.		Mills, W. H.
Prince George	Davis, G. E.		Patterson, A. M.
Prince Rupert	Jones, E. F.	Matheson, D. J.	Newton, S. M.
Revelstoke	Gordon, W. A.		McKinnon, H. F.
Rossland	McLeod, J. A.		Turner, W. A.
Salmon Arm	Lingford, R.		Newnes, W.
Slocan	Graham, W. E.		Swan, P.
Trail	Monypenny, W. E. B.		Clark, H.
Vancouver	McQueen, W.	Robinson, D. H.	Taylor, L. D.
Vernon	Edwards, J. G.		Stewart, L. L.
Victoria	Bradley, E. W.	Smith, E. C.	Pendray, J. C.

BRITISH COLUMBIA MUNICIPAL OFFICIALS, 1927—*Continued.*

Districts.

District.	Clerk and Treasurer.	Reeve.	Address.
Burnaby	Moore, A. G.	Bell, C. C.	Edmonds.
Chilliwhack	Bryce, S. L.	Wells, W. M.	Chilliwack.
Coldstream	Henderson, E.	Morris, W. R. C.	Vernon.
Coquitlam	Newman, R.	Macdonald, R. C.	Maillardville.
Delta	McDiarmid, N. A.	Paterson, A. D.	Ladner.
Esquimalt	Pullen, G. H.	Elrick, J.	Esquimalt.
Fraser Mills	Gallaher, R.	Wrightson, F. G.	Fraser Mills.
Glenmore	Corner, R. W.	Cushing, J. N.	Kelowna.
Kent	Fooks, H.	McRae, J.	Agassiz.
Langley	Payne, R. A.	Poppy, D. W.	Murrayville.
Maple Ridge	McFarlane, J. C.	Martyn, J. B.	Port Haney.
Matsqui	LeFeuvre, J. A.	McCallum, A.	Aldergrove.
Mission	Barr, J. A.	Wren, W. H.	Mission.
North Cowichan	Ancell, H. M.	Evans, J. N.	Duncan.
North Vancouver	Tate, D. G.	Fromme, J. M.	North Vancouver.
Oak Bay	Blandy, R. F.	Anscomb, H.	Oak Bay.
Peachland	Ingliss, C. C.	Harrington, R.	Peachland.
Penticton	Bracewell, B. C.	Macdonald, G. A. B.	Penticton.
Pitt Meadows	McDermott, W.	Blaney, J.	Pitt Meadows.
Point Grey	Floyd, H.	Paton, J. A.	Kerrisdale.
Richmond	Shepherd, S.	Miller, J. W.	Eburne.
Saanich	Sewell, R. R. F.	Crouch, Wm.	Royal Oak.
Salmon Arm	Wild, B. A.	Harbell, J. H. W.	Salmon Arm.
South Vancouver	Riley, W. T.	Cornett, J. W.	South Vancouver.
Spallumcheen	Wiglesworth, J. R.	Hassen, M.	Armstrong.
Sumas	McPhail, E. B.	Lamson, C. A.	Huntingdon.
Summerland	Nixon, F. J.	Johnson, R.	Summerland.
Surrey	Gray, J. P. M.	Reid, T.	Cloverdale.
Tadanac	Crowe, R. C.	Willis, F. S.	Tadanac.
West Vancouver	Ollason, J.	Vinson, V. V.	Hollyburn.

Villages.

Village.	Clerk and Treasurer.	Chairman of Commissioners.	Address.
Abbotsford	Pratt, F. G.	Webster, E.	Abbotsford.
Burns Lake	Godwin, S.	Brunell, P.	Burns Lake.
Creston	Taylor, W. O.	McCreath, H. S.	Creston.
Mission	Barr, J. A.	Abbott, E. J.	Mission.
Smithers	Dimock, C. L.	Orchard, E. E.	Smithers.
Vanderhoof	Lacey, J. H. F.	Ogston, George	Vanderhoof.

VICTORIA, B.C.:
Printed by Charles F. Banfield, Printer to the King's Most Excellent Majesty.
1927.

PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF ATTORNEY-GENERAL

REPORT

OF THE

PROVINCIAL GAME WARDEN

FOR THE YEAR ENDED

DECEMBER 31ST, 1926

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

To His Honour ROBERT RANDOLPH BRUCE,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to submit the Report of the Provincial Game Warden for the year ended December 31st, 1926.

A. M. MANSON,
Attorney-General.

Attorney-General's Department,
Victoria, B.C., 1927.

OFFICE OF THE PROVINCIAL GAME WARDEN,
VICTORIA, B.C., January 31st, 1927.

Honourable A. M. Manson, K.C., M.P.P.
Attorney-General, Victoria, B.C.

SIR,—I have the honour to submit herewith my Report as Provincial Game Warden for the year ended December 31st, 1926.

I have the honour to be,
Sir,
Your obedient servant,
J. H. McMULLIN,
Provincial Game Warden.

REPORT OF PROVINCIAL GAME WARDEN, 1926.

GENERAL SUPERVISION.

For administrative purposes British Columbia is divided into five territorial divisions and the accompanying reports submitted by the Inspectors commanding these divisions are a careful and full presentation of game conditions in the Province during the year 1926.

In January, 1926, the Game Laws Enforcement Branch of the British Columbia Provincial Police was completely reorganized. Under this reorganization the staff of Game Wardens has been increased from twenty-six to forty-five, and consequently more direct control in outlying portions of the Province has been the result, and thereby better protection has been afforded the game than in the past. During the latter part of the year 1926 the staff was further increased, and it is with a great deal of interest to note the appointment of two Game Wardens in the Fort Nelson area, a district which has been suffering in past years through want of proper protection, due mostly through the geographical location of the district, which is without any communication with the outside world for a number of months each year.

TRAP-LINE REGISTRATION.

As mentioned in my report for the year 1925, a system is now in operation covering the registration of trap-lines. As specially prepared maps were required for use in connection with the trap-line registration regulations, this has, to a great extent, handicapped and retarded the system which has been inaugurated to take care of these regulations, but I am assured that this system will be working smoothly during the coming year.

FUR-FARMING.

A great number of applications have been received during the year from nearly every portion of the Province for fur-farming permits and information in regard to fur-farming generally, and every step has been taken to furnish the necessary permits and required information at once. It will be of interest to note the statement covering returns of the licensed fur-farmers on page 52.

COMPARATIVE STATISTICS.

Calendar Year.	Informations laid.	Convictions.	Cases dismissed.	Firearms confiscated.	Fines imposed.	Revenue derived from Sale of Game Licences and Fees.	Revenue derived from Fur Trade.
1917	111	97	10	....	$1,763.50	$ 65,487.50	.....
1918	194	167	13	5	3,341.00	75,537.00	.....
1919	267	242	25	36	6,024.50	116,135.00	.....
1920	293	266	27	46	6,073.00	132,296.50	$ 5,291.39
1921	329	312	17	74	6,455.00	114,842.00	24,595.80
1922	359	317	42	44	7,275.00	127,111.50	51,093.89
1923	309	280	29	24	5,676.50	121,639.50	60,594.18
1924	317	283	34	24	4,768.00	125,505.50	56,356.68
1925	296	279	17	43	5,825.00	123,950.50	56,287.78
1926	483	439	44	39	7,454.00	135,843.50	62,535.13

ACKNOWLEDGMENTS.

Owing to the splendid work of all members of the Force and the co-operation received from the Game Conservation Board and the sportsmen of the Province, I feel that the wild animal and bird life of British Columbia has received the maximum of protection, and I wish to express my thanks for the hearty support furnished by the above.

"A" DIVISION (VANCOUVER ISLAND).

By Inspector T. W. S. Parsons, Officer Commanding.

For your information I beg to submit my divisional game report for the year 1926.

"A" Division, British Columbia Provincial Police, comprises the whole of Vancouver Island and that coastal portion of the mainland of the Province lying between the 50th and 51st degrees of latitude.

For administrative purposes this important territory is subdivided into three game districts respectively commanded by Sergeant Robert Owens, Victoria; Staff-Sergeant A. T. Stephenson, Nanaimo; and Corporal R. Matthews, Courtenay, in whom, as their reports show, the Department possesses tried officers of skill and ability.

All told, our divisional strength consists of thirty-five officers, non-commissioned officers, and men, who, in the matter of game-protection, are happily not divided into "so many game wardens and so many policemen." To the contrary, they present a united divisional front, a fact more than evidenced by the increase in the number of prosecutions launched: 1923, 90; 1924, 92; 1925, 72; 1926, 121.

In respectfully drawing your attention to the reports submitted below with the suggestions therein contained, I would also, on behalf of "A" Division, express my thanks to the Chief Game Inspector, Major M. Furber, to Staff-Sergeant F. R. Butler, and to the Headquarters Game Staff for their invariable courtesy and unfailing assistance.

VICTORIA DISTRICT (SOUTHERN VANCOUVER ISLAND).

Report of Sergeant Robert Owens, N.C.O. i/c.

Game Animals.

Bear.—Black bear are reported as being fairly plentiful in the Jordan River District. As there does not appear to be any keenness on the part of sportsmen to hunt these animals, they will undoubtedly continue to increase. In the Duncan District black bear are quite numerous.

Deer.—Deer are on the increase, does and fawns predominating. Carcasses of doe deer have been found on several occasions, these evidently being shot by mistake and left to rot rather than risk incurring a chance of being prosecuted for violating the "buck" law. It was invariably found impossible to trace offenders, although every reported case of this nature was very carefully investigated.

In view of the increasing number of female deer I would recommend that an open season on does be declared for a short period at the beginning of the hunting season. The season on buck deer might advantageously open at least two weeks sooner and close at the end of November. This is suggested as during the latter part of the season "rutting" commences and the bucks are not in good condition.

Wapiti (Elk).—Elk are doing well in the Cowichan Lake area and are on the increase, and several bands of cows with calves were seen on the Shaw Creek Game Reserve. The calves were in excellent condition and more numerous than ever. In the Shaw Creek, Nanaimo, and Nitinat River Divide there is every indication that elk are increasing rapidly, while in the Jordan River District a few elk have been reported.

Fur-bearing Animals.

Beaver.—Fair reports have been received as to the increase in beaver in the Cowichan Lake area, and if adequate protection is given them I have no doubt that this increase will continue.

Marten.—Some fair catches have been made in the district.

Mink.—Fairly numerous.

Muskrats.—The Game Warden at Cowichan Lake reports that there has been a remarkable increase in muskrats in his district. During the summer months, when the lake is at a low level, a number of new muskrat-houses were noticed. Muskrats have also been seen in Somenos Lake and Creek; in the Saanich Peninsula there are signs of muskrats.

Otter.—Although occasionally caught, these animals cannot be considered as being plentiful.

Racoon.—Racoon are very plentiful and a number of complaints have been received in regard to depredations of these animals to domestic as well as game birds.

Weasel.—There are a few weasel in the district.

Game Birds.

Pheasants.—During the past season these birds were fairly numerous.

Grouse (Blue).—Reported as being plentiful and in good condition. Sportsmen experienced great difficulty in obtaining goods bags.

Grouse (Willow).—These birds were not as plentiful as the blue grouse and the number seen during the hunting season was disappointing.

Quail.—Very plentiful. The bob-white quail liberated in the district a few years ago do not appear to increase to any great extent.

Partridge.—A number were noticed throughout the district.

Migratory Game Birds.

Ducks.—Ducks have been plentiful in the district and in good condition.

Geese and Brant.—Scarce.

Snipe.—Plentiful in the Sooke District but scarce elsewhere.

Fur-farming.

The number of fur-farms have increased.

Game Reserves.

Patrols have been constantly made in the Shaw Creek, Nitinat, and Nanaimo River Divide; in the mountains of the Cottonwood Creek Valley and McKay Creek. These areas, with the Shaw Creek Game Reserve, have been the subject of very favourable reports as to the game conditions.

Special Patrols.

A number of special patrols have been made in the district during the year 1926.

Vermin.

Cougar.—Numerous reports have been received regarding the increase in cougar and a number of these animals have been taken in different parts of the district.

Cats (Domestic).—As usual these animals have been giving the Game Wardens considerable trouble, but it is gratifying to note that a number of vagrant domestic cats have been destroyed during the year.

Owls.—These birds have done a great deal of damage during the past year. Every effort should be made to control this pest, and in this connection I would suggest that a bounty of 50 cents be granted by the Game Conservation Board.

Prosecutions.

A considerable number of offenders against the "Game Act" and the regulations were successfully prosecuted during the year. The painstaking services of Constable Gidley, Bishop, and Simpson in enforcing the provisions of the "Game Act" are respectfully brought to your attention. These Constables have spared no effort in making their work a success.

Hunting Accidents.

Hunting accidents have resulted in two fatalities in this district. Clifford Syme was shot and killed by one J. C. Horton at Crofton and Raymond Fisher, of Duncan, died from a self-inflicted wound.

Propagation.

A large number of pheasants have been raised on the Elk Lake Game Farm and liberated in the district.

Summary.

Conditions have been good throughout the entire district during the year 1926, and it is expected that the season of 1927 will be equally satisfactory from a sportsman's point of view.

NANAIMO DISTRICT (CENTRAL VANCOUVER ISLAND).

Report of Staff-Sergeant A. T. Stephenson, N.C.O. i/c.

Game Animals.

Game animals are on the increase in this district, particularly elk and deer. Bear are also plentiful. Due possibly to the unusual weather conditions, the deer did not seem to be in very good condition during the past season.

Fur-bearing Animals.

Beaver are on the increase and, according to complaints received from time to time, some damage has been caused by these animals to agricultural lands.

Game Birds.

The past season was a rather poor one in this district for almost every variety of game bird. Pheasants were very scarce and there were few goods bags reported by sportsmen in the district.

Migratory Game Birds.

Neither geese nor ducks were plentiful. Brant were fairly numerous, but very few were taken.

Vermin.

A few cougar were accounted for in the district, but these animals are not numerous at present.

Crows are still numerous.

Game-protection.

Since my last annual report Constable H. C. Pyke has replaced Constable Robert Marshall in the Nanaimo District. I may say that during the nine months in which we have had the services of Constable Pyke he has accomplished a great deal of useful work in the matter of game-protection. He has secured a number of important convictions, and his efforts, coupled with those of Constable Adam Monks in the Alberni District, have resulted in violations being kept down to a minimum.

Both these officers rendered excellent service in a capacity that calls for much arduous efforts and the exercise of considerable discretion.

Propagation.

Deer, elk, beaver, blue grouse, and quail appear to be increasing. Pheasants, however, seem to be on the decrease, and I would respectfully recommend that a number of these birds be sent to Constable Pyke and liberated where he deems it advisable in the Nanaimo District.

Fur Trade.

There are no established fur-trade posts in the district in spite of the fact that we have many resident trappers.

Fur-farming.

Fur-farming is proceeding steadily in this district, but as yet there is no definite progress to report.

Registration of Trap-lines and Guides.

While registration of trap-lines and guides has been in force in most other parts of the Province, it has not hitherto been in vogue on Vancouver Island.

General Remarks.

I wish to take this opportunity of expressing my appreciation of the excellent work performed by Constable H. C. Pyke, Nanaimo Detachment, and Constable Adam Monks, Alberni Detachment, during the past twelve months. Their work, as previously pointed out, entails much arduous labour, patience, and the exercise of considerable discretion. By their industry and sound common sense these officers have done much to cause the "Game Act" to be respected and enforced.

COURTENAY DISTRICT (NORTHERN VANCOUVER ISLAND AND A PORTION OF THE MAINLAND COAST).

Report of Corporal R. Matthews, N.C.O. i/c.

Game Animals.

Bear.—Black bear south of the Campbell River are scarce, but north of this river they are in fair numbers and seem to be holding their own. On the mainland portion of this district grizzly bear are plentiful at the head of Knight Inlet and Wakeman Sound.

Deer.—Deer are very plentiful throughout the district and are on the increase, which is due, no doubt, to the continued close season on does. During the past summer a number of deer died, and on being examined it was found that flukes were in the liver. It is thought that drinking stagnant water in the swamps is the cause of this as very few deer killed on the highland were found with infected organs.

I would suggest that the open season on bucks be shortened by at least two weeks and closed not later than November 30th. The reason for this is that by December 1st the rutting season has been on a month and the bucks are neck-swollen, thin, and unfit to eat. Again, at this time of the year the bucks are full of fight and will stand and look at a hunter until they are shot down; a regular slaughter takes place and very few of the deer are taken out of the woods as they are in such poor shape. I would like to add that during the first part of December a good many of the bucks that were shipped out of the district were nothing but skin and bone.

Wapiti (Elk).—Wapiti (elk) are doing well and are on the increase. Small bands are reported from Buttle Lake to the Nimpkish River and from Strathcona Park to the west coast. It is impossible to give an estimate as to numbers unless an extended patrol is made into these districts. Indians have reported that cougar are killing wapiti, but so far information has been very meagre and not first hand.

Mountain-goat.—Mountain-goat are plentiful at Wakeman Sound, Kingcome Inlet, Knight Inlet, Simoom and Thompson Sounds. These animals are on the increase, which may be attributed to the fact that they are in a virgin country which is seldom hunted by outsiders.

Fur-bearing Animals.

Beaver.—Beaver are now getting to be in good numbers on the Island, and in some places, especially Quinsam River, Nimpkish River, and adjoining areas, they are plentiful.

Fisher.—Very scarce.

Marten.—These animals are scarce on Vancouver Island where they have been trapped out. The outlook is better on the Mainland, but even there they are decreasing in numbers through excessive trapping.

Mink.—Mink have been trapped too hard and on some streams where these animals were once plentiful there is no breeding stock left. On the Mainland and the north end of Vancouver Island some fair catches are being made, but on the whole the catch has been meagre.

Otter.—A few land-otter have been taken this season north of Campbell River and along the Nimpkish River. These animals are, however, very scarce.

Racoon.—Racoon are in fair numbers all over the district. The catch in 1926 was good.

Weasel.—Weasel or ermine are not plentiful.

Wolverine.—Fairly plentiful between Wakeman and Seymour Inlets, Frederick Arm and Salmon Arm, as well at the head of Knight Inlet. In other sections of the district they are scarce.

Game Birds.

Grouse (Willow).—Willow-grouse are decreasing. They appear, however, to be holding out well on the logged-off lands where cover is fairly good. This applies especially to the swamps between Union Bay and Campbell River.

Grouse (Blue).—These birds had a very heavy "hatch" during the past breeding season and were subsequently plentiful.

Pheasants.—Pheasants are increasing and each season are spreading farther north.

Quail.—Quail had a good nesting season last year and there was a noticeable increase. New blood should be turned out.

Migratory Game Birds.

Ducks.—Mallards, pintail, widgeon, and green-winged teal are plentiful and no indications of any decrease can be noted. In this district mallards are very plentiful.

Geese.—Canada geese are to be found in good numbers on the Mainland at Shelter Bay, Knight Inlet, Wakeman and Thompson Sounds. In this portion of Vancouver Island they are scarce.

Brant.—Brant are found in good numbers and at the present they are fairly plentiful between Comox, Denman Island, and Union Bay.

Swans.—Scarce.

Shore-birds.—Greater and lesser yellow-legs are very scarce and this also applies to plover. Wilson snipe are showing up in fair numbers.

Vermin.

Cougar are on the decrease, but there is still a number far back in the hills. During the winter nine were reported as being killed.

Wolves are very scarce in the district.

Crows are to be found in thousands along the coast and these birds take their toll of nesting game and non-game birds. Owls are fairly numerous, while eagles are plentiful in the northern portion of the district.

Cats (domestic), living altogether in the bush, are on the increase and if not checked will do tremendous damage to game and song birds.

Game-protection.

During the past summer it was discovered in this district that the Chinese were paying as high as $50 for unborn fawns, which are highly prized as they are used in making medicine. One prosecution was conducted at Cumberland; the accused pleaded "guilty" to a charge of "having in his possession five deer under the age of one year," and the maximum penalty of $300 was imposed.

As this district was formed in June last, I am only able to give a summary of the prosecutions conducted for seven months. During this time the "Game Act" and regulations were vigorously enforced. The Game Warden, Constable W. V. Fenton, was continuously patrolling the district and had the assistance and co-operation of the Police officers at all times. Thirty-two prosecutions were conducted, twenty-nine convictions were obtained, and fines totalled $1,055. On charges of pit-lamping there were two dismissals and one conviction.

As the district has been enlarged, I would recommend that another Game Warden be stationed in the northern part of the district at Port Hardy and that a launch be supplied for game patrol-work.

Hunting Accidents.

There were no hunting accidents in the district during the year 1926.

Propagation.

Pheasants are increasing rapidly and are spreading north to the logged-off lands near Campbell River.

Quail are increasing, but to date the breeding stock is not large.

Muskrats would do well in this district and I would recommend that these animals be introduced. There are hundreds of acres of swamp lands which would make ideal homes for these animals.

Fur Trade.

There are no licensed fur-traders in this district as the bulk of the fur is sent direct to Vancouver by trappers.

Fur-farming.

Fur-farms are increasing in numbers each year and mink, marten, and muskrats are being successfully raised. At the present time, however, fur-farming in this district is an experiment, but as the breeding stock increases the fur-farms are being enlarged and without a doubt the farmers will soon be getting returns from this industry.

Registration of Trap-lines.

This system appears to be working out well on the Mainland and I would recommend that the same regulations be made to apply to Vancouver Island.

"B" DIVISION (KOOTENAY AND BOUNDARY DISTRICTS).

By Inspector W. R. Dunwoody, Officer Commanding.

I have the honour to submit herewith annual game report for "B" Division for the calendar year 1926, as requested in your letter of December 31st last. In dealing with the different subjects I have conformed to the order in whch they appear in your letter.

As the variety of game animals differs considerably in the four districts comprising this Division, I am dealing separately with the districts, and I trust that, for reference purposes, this will be more satisfactory than if the Division were dealt with as a whole.

Game Animals.

Boundary District.

Deer.—These animals show an appreciable increase in this district, and although the local Game Warden there reports the proportion of bucks and does in much better shape than formerly, I am of the opinion, from reports received from all over the Division, that we have now arrived at a time when a change should be made in the "buck" law. Were the reports I have received confined to the fact that does are seen out of all proportion to bucks, this would not be of much importance as the bucks are generally found on the higher summits; but all information points to the fact that there is an ever-increasing number of barren does to be found.

Reports show that in the neighbourhood of thirty cougar were killed last winter in the Boundary District, and as statistics show that cougar will kill three deer in a week for food, the slaughter of this type of vermin must prove very beneficial to the increase of the deer family.

Mountain-sheep.—I regret to report that, although a closed season has been in effect for nearly eighteen years in the Similkameen District, there is not a corresponding increase shown in the number of mountain-sheep to be seen either on the range south-east of Penticton or in the Ashnola District.

Mountain-goat.—There are only a few mountain-goat and these are reported to be in the Skagit River District and in the Chopaka area.

Bear.—These animals are not reported as plentiful.

Fernie District.

All reports point to a decided increase in the game animals in this district, with the possible exception of caribou, which are apparently migrating west, as we have several reports showing an increase in this animal in the Kootenay Lakes.

Moose.—Moose are also increasing and particularly in the Elk River Game Reserve, but I do not think this increase is yet reaching a stage where I could recommend an open season in the Fernie District. The increase is limited, and I think one of the reasons for this is the fact that moose pasturage in that part of the Province is rather scarce.

Mountain Sheep and Goat.—From information received, it would appear that all big-game hunters this past season were well satisfied with the bags they got of sheep and goat, so that undoubtedly these animals are plentiful.

Bear.—Bear of all kinds are reported as being plentiful.

North-east Kootenay District.

Old residents and even the Indians in the Kootenay and Columbia Valleys state that game animals are more plentiful in this district than they have been for many, many years, although moose and caribou have not yet reached the point where an extended open season would be advisable.

Deer.—White-tail and mule deer are abundant and the black-tail deer seem to be coming back.

Wapiti.—This animal is also seen in abundance in this district.

Bear.—Bear of all kinds are reported as being plentiful. The close proximity of the Elk River Game Reserve and the National Parks and Game Reserves, and also the fact that the past two winters have been extremely mild, are important factors in the general increase of all game animals. One guide is reported as having seen eighty-three sheep on one slide and another hunter is reported as having seen forty rams before he finally shot one.

West Kootenay District.

Favourable reports are received from all quarters in this district as to the increase in game animals.

Bear.—Grizzly bear can be found in the Slocan and Upper Duncan country. Black bear are numerous throughout the district and in very many instances are becoming a nuisance to fruit-farmers. Brown bear are in fair numbers.

Caribou.—In my remarks under this heading in the Fernie District I have already pointed out that caribou are apparently migrating west, and small bands of these animals have been seen at Wilson and Mill Creeks, in the Slocan, and quite a large herd is reported in the Upper Duncan, as well as some on the South Fork of Kaslo Creek and in the Howser District.

Mountain-goat.—A few of these animals are reported in the Lardeau on Davis and Copper Creeks, also on the range between Summit Lake and Halcyon, in the Arrow Lakes District. A few have also been noticed in the Little Slocan District.

Mountain-sheep.—A few of these animals are reported in the Little Slocan District.

Wapiti.—A small herd of elk are reported at LaFrance Creek.

Deer.—Deer are plentiful throughout the district. The open season this past year was extremely mild and hunters had to undergo considerable hardship if they wanted to kill deer, the result being that not a great number were killed.

Fur-bearing Animals.

Boundary District.

Beaver.—Beaver are reported as very plentiful in this district. I trust that a similar report can be furnished next season, when we will then be able to speak from experience as to the results of the open trapping season on this fur-bearing animal. Personally, I must say that I have some misgivings as to the outcome of the open season, as apparently every trapper and hundreds of others who are not trappers have registered trap-lines in order to be in a position to get these animals when the season opens.

Muskrats.—These animals are very plentiful.

Lynx.—Lynx are in fair numbers only. Lynx being carnivorous animals, I have always been in some doubt as to the advisability of keeping this animal on the fur-protected list.

Marten and Mink.—These animals are scarce throughout the district.

Fernie District.

Beaver and Muskrats.—These are on the increase, which undoubtedly is due to the protection which has been afforded during the past five years. I am very much afraid that the open trapping season will gravely reduce their numbers, if not tend to exterminate them entirely.

Lynx, Mink, Marten, and Weasel.—These are all reported as plentiful. The fearful havoc wrought by the weasel on the game birds leads me to suggest that this animal be struck off the list of protected fur.

North-east Kootenay District.

Whilst on the upper reaches of the Columbia River beaver and muskrats are reported plentiful, these animals, together with lynx, marten, mink, and otter, are reported scarce in the other parts of the district. Nevertheless, the protection of the last five years has been useful in this respect. I think, however, that an additional few years, coupled with a vigorous campaign against vermin, would be still more beneficial. Available food-supplies cannot feed fur-bearers and vermin too.

Reports from the Revelstoke and Big Bend country show a decided increase in all fur-bearing animals.

West Kootenay District.

Beaver show a good increase throughout the district and particularly in the Slocan River, Salmon River, and in the vicinity of Nakusp. Whilst I presume the contemplated open season is the correct one from a fur point of view, at the same time it does seem unfortunate that in the killing of female beaver at that season there will probably be four or five lives sacrificed.

Marten, mink, fisher, and lynx are reported on the increase, as well as muskrats.

Game Birds.

Boundary District.

Pheasants.—Pheasants during the past two seasons have shown a general decline in numbers in this district. I am of the opinion that the last open season was altogether too long. The birds are smaller and the cocks are scarce. From my own observations in this district and from reports of the local Game Warden, I think that during a very limited open season birds of both sexes could be shot, the bag of course to be extremely limited.

Partridge.—Although this bird two years ago was reported a menace to crops, I do not think we are likely to have a complaint of this nature in the near future, as there is a considerable falling-off in the numbers of these birds. Reports indicate that they have gone north to Vernon District, where more grain is grown.

Quail.—Quail are reported as being numerous east of Penticton, on the benches.

Grouse.—Reported plentiful throughout the district, with the exception of the Similkameen, where I would recommend a closed season for three years, so that these birds may have an opportunity of again propagating.

Fernie District.

Grouse (Willow).—I would strongly recommend a closed season for at least two years for this bird in this district. This, as you are aware, is a very easily taken bird and I think the common use of the automobile accounts for its scarcity in a very great measure.

Grouse (Blue).—These are more plentiful than the ruffed variety, as they are better able to protect themselves in the higher altitudes.

North-east Kootenay District.

Grouse are reported as very scarce in the Kootenay Valley and none too plentiful on the Upper Columbia. In the Revelstoke and Big Bend areas, however, they are reported in good numbers.

West Kootenay District.

On the whole, I think it can be safely said that grouse are on the decrease throughout this district. An extremely bad condition of forest fires existed during the past two years and in a great measure will probably account for the condition of grouse in the district.

There are a few coveys of Hungarian partridges in the district adjacent to Nelson.

Although an effort has been made by the Game Board to propagate the pheasant in this district, up to date this has met with indifferent success, with the possible exception of the open valley at Creston, where considerable numbers of these birds are to be found.

MIGRATORY GAME BIRDS.

Boundary District.—There are very few migratory birds throughout this district. My remarks, however, under this heading will be confined solely to the Vaseaux Lake Game Reserve, where the local Game Warden reports an increase in ducks and geese. The latter, apparently, immediately on the young reaching maturity, migrate south, so that local hunters obtain no benefit. Apparently an effort is to be made to band some of these geese next spring, with a view to discovering their destination.

A few trumpeter swans are found on Vaseaux Lake, but as this lake and the Okanagan River freeze over, the birds settle at the south end of Okanagan Lake and near Kelowna.

Fernie District.—In the Fernie District migratory birds are practically a nonentity. Occasionally some ducks are seen on the Elk River and on some of the lakes near Elko and Cranbrook, the birds not remaining in any of these places. The same would apply to geese.

North-east Kootenay District.—A few ducks and geese nest each year on Columbia Lake. Conditions are not very favourable, however; the rapidly changing water-levels of the lake, scant feed, and natural enemies are factors responsible; although mergansers and fish-eating ducks appear to thrive and increase. Ducks and geese are reported as having bred in good numbers on the Columbia River, but they left early for the south and very few northern birds came in. Ducks, geese, brant, and Wilson snipe are reported plentiful in the Revelstoke area.

West Kootenay District.—Migratory birds in this district are practically confined to the Kootenay Lakes near Creston, where there is always a considerable number of local-bred birds and always a big showing of northern birds in their flight south. This last season has been no exception to the rule and migratory birds of all kinds were reported plentiful in that area.

VERMIN.

Boundary District.—Under this heading cougar and coyotes are the main menace to game life. Realizing this, the Department had Special Constable Shuttleworth appointed for this work, and I think this officer's record in the destruction of predatory animals has been excellent. Nine cougar were killed by Constable Shuttleworth last winter and in all thirty cougar were killed in the Boundary District.

Constable Robertson reports that the use of the oil of catnip has been demonstrated as a lure for members of the cat family, and it is hoped that with the use of traps in conjunction with the oil of catnip some benefit will be derived by way of thinning out these animals.

The same Constable offers the suggestion in connection with coyotes that the present bounty of $2 be cut down to $1 during the winter months, when the fur is in good condition and commands a good market price, and increased to $5 per pelt from May to September. I would endorse this suggestion.

Fernie District.—Coyotes are reported as being all too plentiful in this district. They are particularly destructive to deer in the spring, running them on the crusted snow. It is reported that Indians have done good work in the past year taking out the young ones in the spring.

Cougar are reported as being numerous in the Elk Valley Game Reserve. It might be advisable in the near future to allow predatory-animal hunters into the reserve on special permit in an effort to thin out these animals.

North-east Kootenay District.—In the Kootenay Valley vermin of all descriptions are reported as numerous; in fact, Constable Greenwood, who is a close observer of animal-life, almost despairs of the survival of any game animal or bird.

Hawks are apparently a terrible menace to bird-life at the present time, as are cougar and coyotes to the game animals.

Constable Greenwood also suggests the raising of the bounty in the summer on coyotes.

West Kootenay District.—Unfortunately, cougar are plentiful in the Lower Arrow Lake country, Slocan Valley, and in the Grohman Creek area. Coyotes are numerous throughout.

Game-protection and Hunting Accidents.

Boundary District.—The continual appearance in various parts of the district within a short space of time of Constables Robertson and Shuttleworth has been a deterring factor in preventing violations of the "Game Act" by Indians and others. There were no hunting accidents in this district.

Fernie District.—In the Fernie District Constable Ira Brown is employed specially in connection with protection in the Elk River Game Reserve. This Constable is a splendid type of man for this work and I have no doubt that the increase in the game in that district is due in a great measure to his watchful eye on game-law violators. Constable Thomas, at the other end of the district, is an enthusiastic game-protector.

There were no hunting accidents in this district.

North-east Kootenay District.—All game officers in this district reported the hearty co-operation of Rod and Gun Clubs and visiting sportsmen in the enforcement of the "Game Act." A considerable number of people, however, are reticent in reporting violations. Something in this regard might be accomplished if section 53 were printed in the regulations each year.

No hunting accidents reported in this district.

West Kootenay District.—In this district there are no special game localities where the necessity for a Special Game Warden arises, and game duties are therefore carried out by local officers. There have been no complaints regarding the manner in which these officers perform their duty.

I regret to report one fatal hunting accident, which occurred on Sunday, November 21st, 1926, when a boy named John L. Francis was accidentally killed by his companion, a boy named James Clelland, on the Silver King Mine Road, near Nelson. It was clearly proven an unavoidable accident, as Clelland slipped in the snow, his rifle discharging as he was falling, killing Francis instantly.

Propagation.

Boundary District.—The present year has been good in so far as native birds are concerned and in game animals; excepting grouse in the Similkameen, previously mentioned.

Fernie District.—Although there is a reported increase in deer in this district, various reports have reached me with reference to the barren does which are seen. The fact that deer are increasing may seem to contradict my previous statement that the "buck" law had outlived its usefulness. I think that the increase shown in the Fernie and North-east Kootenay Districts may be attributed to the proximity of the game reserves, where these animals are so well

protected. I am of the opinion that it would be advisable to cut out the "buck" law for a few seasons and note results.

Grouse reports are unfavourable as to propagation; hence my previous recommendation for a closed season.

North-east Kootenay District.—Reports are not very favourable regarding the turning loose of some pheasants on the Columbia south of Golden last year. Apparently these birds have disappeared. I am very much afraid that the winters are too severe in the valley for the Mongolian pheasants. I rather think that the Hungarian partridges could be imported more successfully and would be a better type of game bird in the valley than the pheasant.

West Kootenay District.—Nothing was done in this district by way of propagation during the year under review.

Game Reserves.

Boundary District.—We have two game reserves in this district, one the Vaseaux Lake Sanctuary (Bird) and the Kettle River Game Reserve. The former is without doubt one of finest bird reserves in the Interior and has been responsible for an increase in migratory birds, particularly geese.

It is scarcely necessary for me to go into details with reference to the Kettle River Game Reserve, as I note from a recent issue of the British Columbia Gazette that the reserve has been cancelled. It is regrettable that through the condition of the ranchers in that district the Department found it necessary to cancel the reserve, as I feel assured that this was a wonderful portion of the Province for the propagation of game.

Fernie District.—I have already, in previous reports, commented very strongly on the wonderful sanctuary for wild life the Elk Valley Game Reserve has proven, and to persons who have noted conditions in connection with the reserve it is amusing to see animals heading for the reserve about the time the first guns are heard. More game reserves certainly mean more game.

West Kootenay District.—The only game reserve we have in this district is a restricted area across the lake from Nelson. Pheasants and grouse are reported as doing well in this area and ducks make a haven of it during the latter part of the open season.

Fur Trade.

Trapping for fur-bearing animals, with the exception of beaver and muskrats, opened in this Division on November 15th, 1926.

Boundary District.—Up to the end of December no fur trade of any account had materialized.

Fernie District.—The fur trade is probably offset to some extent by the fur raised on fur-farms, especially fox, marten, and mink. Prices are reported as fairly good. I am of the opinion that the new system of handling fur will undoubtedly help to preserve the quality of British Columbia fur by preventing it being tampered with.

North-east Kootenay District.—The fur trade in this district is reported as picking up and to date several good fur-catches have been reported by the trappers in the district.

West Kootenay District.—Only a few trappers have presented fur in the district and royalties have been paid on a few marten and mink. The fur is reported in good condition.

Fur-farming.

Boundary District.—It is reported by Constable Robertson that the Dominion Government has silver-fox farming under supervision and that it is proving a wonderful success. Fur-farming being only in its infancy, the Constable suggests that the industry be carefully guided by the Department.

Fernie District.—Fur-farming is in its infancy in this district; probably the principal farm is that of the Cranbrook Silver Black Fox Company.

North-east Kootenay District.—Fur-farming has not been gone into very extensively in this district. Commander Powles has a fox and muskrat farm near Wilmer. I understand he has ten pairs of foxes, costing approximately $10,000.

West Kootenay District.—There are a few fox-farms in this district, but reports are not very favourable. I presume this can be accounted for by the fact that in most cases inexperienced persons are starting and operating the farms.

Registration of Trap-lines and Guides.

Since the "Game Act" was amended and it became necessary for each trapper to register his trap-line, over 400 applications have been received at this office from all parts of the Division. This would lead me to believe that the trapping of fur will be carried out on a gigantic scale during the coming year, and in my opinion grave danger is to be anticipated of killing off the fur-bearing animals. Dealing with these applications entailed a considerable amount of work on the part of officers and in many cases the greatest difficulty was experienced in settling disputes. Next year, however, should see the end of any trouble as trappers will have their lines clearly defined.

In my opinion, for humane reasons, the length of a trap-line should be limited and residents of a locality should be given preference on trap-lines rather than outsiders.

The Fernie and North-east Kootenay Districts are the only districts where we have any guides. Some trouble has been experienced in the past season with men coming from Banff and guiding parties without proper licences. Prosecutions were instituted in some instances and convictions secured.

Special Patrols.

Boundary District.—One special patrol was made by Constable Robertson through the Kettle River Game Reserve. One prosecution was instituted and a conviction obtained under section 35 of the Act; careful back-tracking in the snow resulting in two prosecutions for shooting within the sanctuary and two convictions.

Fernie District.—During the month of December Constable Ira Brown performed a most difficult special patrol to the Wall Lake, Akimina, and Sage Creek Districts, under exceptionally trying weather conditions with sub-zero temperatures, in connection with reported illegal hunting in these localities. The Constable found that there was very little foundation for these reports.

North-east Kootenay District.—Constable Greenwood performed a special patrol to Doctor and Finlay Creeks in search of a herd of caribou reported by Dr. Howden.

"C" DIVISION (KAMLOOPS, YALE, OKANAGAN, CARIBOO, AND CHILCOTIN DISTRICTS).

By Inspector W. L. Fernie, Officer Commanding.

I have the honour to submit herewith my annual report under the "Game Act" for the year 1926 for this Division.

Game Animals.

Moose.—Moose are still plentiful and are spreading towards the south. They have been seen south of the Canadian Pacific Railway, near Basque.

Dr. Mills, a gentleman who visits the Cariboo almost every year, has noticed that frequently the livers of moose are diseased, and attributes this to their feeding so largely on water-lily pads, on which there exists a species of snail which acts as an "intermediate host" for the parasite which causes the liver-trouble. Constable Turner, who has patrolled the Bowron Lake country for years, informs me that nearly every liver from these animals that he has seen or heard of is not fit for food, so I do not think this liver-disease is or will be a serious menace to the health of the moose.

Caribou.—These animals, of which there are two varieties, seem to be holding their own, and indeed are increasing in the southern parts of this Province and gradually getting back to their former numbers. They are easily killed and were wantonly slaughtered off in the early days near Kamloops and back of the Seymour Arm of the Great Shuswap Lake.

Elk.—The only place wapiti (elk) occur in this Division is where they were introduced on the Yalakom Game Reserve, and from reports of the Game Warden in charge they are increasing, and I should now say that the experiment of their introduction is a proven success.

Mountain-sheep.—Mountain-sheep seem to keep about the same; a few good heads have been obtained last season in the Bridge River country.

There is a plan on foot to release a box-car load of these animals in the vicinity of Spences Bridge, which are to be obtained from Banff National Park, in which place they are getting too numerous for the range to support them. If this turns out a success, it might be a good idea to distribute the next available lot to other points, such as Yalakom and also the Bowron Lake Reserve, to both of which there is access by motor-car.

Mountain-goat.—All reports coincide in saying the mountain-goats are holding their own. They are to be found anywhere in this Division where the country is wild and precipitous. They can be frequently seen with a good glass from the villages of Hope and Lillooet.

Bear.—Black and brown bear are still increasing, certainly in the southern parts of this Division. The grizzly is perhaps not so plentiful; it is an animal that cannot withstand the advance of settlement and civilization. The opinion of hunters and guides as to abolition of spring hunting for these animals seems to lean towards still making spring hunting permissible.

Deer.—Of these animals we have three species, which all occur in this Division, although the white-tail deer is comparatively rare and is never seen north of the Southern Okanagan country. The mule-deer is found pretty well all over and is increasing, and permission for hunters to shoot one doe during the open season could reasonably be given now and would be favourably received by most sportsmen.

The fact that the Kettle Valley Game Reserve has been cancelled would seem to make it all the more important to establish the "Silwhoiakun" Reserve, north-west of Kamloops. This area was partially prospected out last season, but owing to other important duties not enough time has been spent to suggest even tentative boundaries at present. The only serious opponents to this area being laid aside will come from a few trappers, and this condition would have to be overcome in any part of British Columbia where it was proposed to reserve any land.

The Dominion officials are quite interested in the proposal and volunteer any assistance possible. This country has always been noted as being a great haunt of the mule-deer.

Concerning the Columbianus or Coast deer, one interesting fact has been ascertained, and that is that it occurs on the Bowron Lake Reserve; two different specimens in different years have been shot and examined. Dr. Baker, of Quesnel, will also vouch for the truth of this curious circumstance. It apparently associates or frequents the same haunts with the mule-deer, as it is possible to see by the tracks these animals leave on sand-bars, etc.

Fur-bearing Animals.

Fur-bearing animals are still scarce. The southern portion of this Division never produces any large quantity, but in the northern half the fur output is of importance, as large portions of it are practically uninhabited and fur is the only thing it produces.

The N.C.O. i/c of the Cariboo District reports that there is little fur there now. Possibly it is harder to learn the true facts of affairs than formerly, as since the Department does not insist on the royalty being paid "up-country" the Game Wardens and Constables do not always get the accurate data; another point about this arrangement is that quite a lot of revenue derived from fur royalties which it would appear might be fairly credited to the Cariboo and other up-country points is shown as being revenue collected at the Coast.

Foxes seem to be holding their own in the Chilcotin and more silver and black are being taken all through the Division. This is attributable to some of the inhabitants of the numerous fur-farms occasionally gaining their liberty.

Lynx are still scarce and I presume will be until the rabbits increase again.

Muskrats and beaver are plentiful, and a certain number of convictions are continually being obtained against trappers and others who are trying to gain a march on the law-abiding trapper who is waiting for the season to open.

Marten are very scarce, but with the natural care registered owners of lines will take they may begin to increase from now on.

The animal which shows the greatest increase of all fur-bearers is the coyote. One of the suggestions made about this animal appears worthy of consideration, and that is that the bounty be increased to $5 during the months that the skin is worthless and take the bounty away altogether for the months when the fur is marketable.

As an indication of the numbers of these animals, I find that nearly 500 skins were brought to the Kamloops Court-house in six weeks, and that one trapper, named Mortensen, brought fifty of these himself in one month, for which he collected the $2 bounty and also was able to sell the hides for $9.30 each.

Game Birds.

Hungarian Partridges.—These birds have now crossed the South Thompson River and have gone as far west down that stream as Monte Creek, and they have undoubtedly come to stay.

Pheasants.—Pheasants are doing well, complaints of them being too thick in some places and a scarcity of them in others being received.

Grouse.—Blue grouse seem to be normal. Willow and Franklin grouse, I know, suffered terribly from a cold late snow-storm just after they were hatched, which killed nearly all the first broods and made the fall shooting poor.

Prairie-chicken.—These birds are getting more plentiful.

Migratory Game Birds.

More interest seems to be taken than heretofore in the ordinary migratory bird as to its destination after gathering in Canada in the fall, and also as to where it was the winter before its arrival. There is a well-organized association (Biological Survey, Department of Agriculture, Washington, D.C., U.S.A., and the Dominion Parks Branch, Department of the Interior, Ottawa) that has arranged the distribution of bands, etc., for use in connection with the banding of migratory birds. Literature is distributed by the above-mentioned Departments to licensed bird-banders from time to time, giving plans covering the erection of traps (humane) for use in banding birds.

Vermin.

Crows and magpies are very plentiful and do a great deal of harm and damage. Possibly a bounty put on them would help matters.

Owls are plentiful, while hawks seem to be a little on the decrease.

Cougar seem to be decreasing, although an Indian has just collected the bounty on four which were caught in this area.

Game-protection.

In this Division the two main elements responsible for the destruction of game seem to be the irresponsible foreigners and boys with .22 rifles and the aboriginal Indians. The former of these are continually shooting off grouse and ducks out of season when they have an opportunity. The principal culprits seem to be the sectionmen; sometimes whole crews are foreigners and boarding themselves; these crews are often stationed in very isolated places and difficult for a patrol to reach unobserved, more particularly on the Canadian National Railway north of Kamloops and on portions of the Kettle Valley Railway. To curtail this destruction a little it would seem advisable to put a close season on rabbits, as on more than one occasion persons found carrying .22 rifles in the close season for game have given as an excuse, or reason, that they were out shooting rabbits, which, if these people have a firearms licence, they have every right to do, and unless people are actually caught with game it is hard to get a conviction.

The Indians are apparently responsible for the wanton slaughter of quantities of the big game. Possibly something could be done on the lines suggested in the two former annual reports of getting some of the more influential ones to collaborate with the white race in protecting what game there is left, and it would seem important that a good Indian should accompany the white patrol on some of the trips they undertake, as they are very useful and observant in the mountains. Both in India and Africa the white police of necessity use the natives as scouts, etc., and as they are to hand in this Province, it would appear that the services of the natives might be used to advantage occasionally. The main protection afforded to the game of this Province is in the enforcement of the "Game Act," and in this connection I am pleased to state that the number of prosecutions lodged throughout this Division during the year 1926 far exceeds any other year.

Hunting Accidents.

Two hunting accidents were reported in this Division during the year.

One accident resulted in the death of a young lad named Thomas Charles Cressy, who was out hunting with two brothers, named Halinan. The elder Halinan, aged 18, while climbing a hill, slipped and caught hold of a bush; the bush gave way and he dropped to the ground, his gun striking the ground and discharging at the same time. The shot struck Cressy, who was in front, in the wrist, causing Cressy to release his own gun, which also discharged on falling, the shot penetrating Cressy's knee. This accident occurred on Sunday, September 26th, 1926, and Cressy died on September 28th, 1926, in the hospital at Merritt. Death occurred through shock and loss of blood, and I believe that if either of the Halinan boys had had first-aid knowledge this young lad Cressy would still be alive.

The other accident happened to a young Indian named Alfred Sam on April 5th, 1926. Sam, while returning to the Chu Chua Indian Reserve, and while crossing the Canadian National Railway track, dropped his gun; the gun discharged and the bullet entered the neck

of Sam. First-aid was given this lad by Constable Emmott, who dispatched him to the Kamloops Hospital. Sam recovered shortly afterwards.

Propagation.

The distributing of pheasants throughout the Division seems to be satisfactory.

I understand that the Game Conservation Board intends supplying a few bull elk for the Yalakom Reserve and it will be interesting to observe how these animals make out in their new haunts.

The experiment of releasing a number of mountain-sheep will also be watched with interest at Spences Bridge.

Game Reserves.

There are two reserves in the Division which are worthy of mention, the Yalakom and the Bowron Lake Reserves. It has been a cause of satisfaction that the waterways have been included in the Bowron Lake Reserve, as unless this was done the reserve would only be a nominal one. Kibbee, who used to make a living by trapping on this territory, is more than satisfied now he has the duty of patrolling the area with which he is so familiar.

The Yalakom Reserve is well patrolled and safeguarded by Constable G. D. McKenzie, who has charge of it; as it is particularly the haunt of the mountain-sheep, it might be advisable to introduce some new blood into those already there by shipping some in from the Banff National Park.

Fur Trade.

The fur trade has not improved since my last annual report. No great catches are known of in the northern part of this Division.

Practically all the fur trapped in this Division is shipped to Vancouver, and I think a more complete report on the trading of furs would be obtained at that point.

Fur-farming.

There is a continuance of applications for permits to start fur-farms in this Division. Some of these fur-farms when well managed are making money, especially the silver-fox farms. One large muskrat-farm is becoming established on Swan Lake, about 30 miles north-west of Quesnel. This company is going in for fencing on a large scale. There are also a number of people going in for blue-fox farming. Others are raising chinchilla rabbits, and one lady in the Cariboo, I am informed, is dong very well with these animals.

Dr. J. J. Gillis, of Merritt, I think has still probably the best-appointed silver-fox farm in the Division; his professional knowledge being of great assistance to him in the care of these animals.

On the whole, this industry is steadily increasing and I think will eventually grow to a very important one; and from one point of view the fact of trap-lines being registered has in fact made every such line more or less a fur-farm, as the owner knows that if he wishes he can hold it permanently and will take pains not to exterminate the fur-bearers, but will rather treat it in such a way that they will increase.

From the latest records there are approximately fifty-three fur-farms in this Division.

Registration of Trap-lines and Guides.

With the introduction of the "registration of trap-lines" it is very noticeable that a friendly feeling has been created between the trapper and the Game Warden. The majority of the trappers, realizing that a new system has been put into effect which will assist them in looking after their trap-lines and generally help them to conserve the fur-animals which may be on their trap-lines, appreciate this piece of legislation.

In assisting the trappers to submit their applications and sketches the Game Warden has a splendid opportunity of getting in touch with all game matters in his district. It would appear that the trapper is just as much interested as the Game officials are in the conserving of fur-animals and big game. Much valuable information can be obtained regarding illegal trapping or other game infractions. Further, with the introduction of the registration of trap-lines, the Game Warden or Constable has an opportunity of studying his district thoroughly and can learn many new trails and routes that probably he was not aware of formerly. However, the new system seems to be running fairly smoothly.

We have been handicapped in the way of maps, as some of the districts have no maps at all, and in some cases the maps do not cover the country as completely as they might. Where we have met with the greatest difficulty is in that country south of the Canadian Pacific Railway, where the trapping has been closed for a number of years.

Another difficulty is in certain parts of the Province where ranchers are dependent on the water-supply. These ranchers are afraid that, if trappers are given control over the headwater areas, the beaver will be in due course extinct, and that instead of the water being dammed or stored by the beaver and the water retained there will be no water when it is most needed.

In the application for registering trap-lines it might be better to put the onus of establishing nationality on the applicant rather than on the Department, and certainly the divisional office should be furnished with a sketch similar to the one which is forwarded to General Headquarters, otherwise it is almost impossible to discover if trap-lines desired to be registered later will overlap lines which have already been applied for.

Guides.

The fact of guides being licensed is proving satisfactory and it is a help to the regular Game Wardens in keeping the different hunting-parties under surveillance, and the different guides also take an interest in what other parties and guides are doing and where they are going during the open season, and so an astonishing amount of information is available concerning the amount and description of the game shot and where the carcasses are to be found if it is desired to scrutinize them.

Special Patrols.

There have been many special patrols made and nearly every corner of a rather inaccessible Division was visited by some member of the personnel during the past year.

Corporal Sulivan has been very active and has been on the high broken divides to the south and west, as well as making a reconnaissance of the proposed "Silwhoiakun" Game Reserve to the north-west of Kamloops.

Constable MacRae made two penetrating patrols, one to Towdystan over towards Bella Coola, and the other into the Itcha Mountains; both of these patrols I am sure will have good results.

Constable Hughes, of Cedar Creek, has made some patrols through the Horsefly and Rose Lake country.

Sergeant Mortimer and Constable Quesnel made a special patrol into the Monashee country.

Constable G. D. McKenzie went into the Bridge Lake country and also patrolled the Yalakom Game Reserve.

Inspector Fernie patrolled the country south of Kamloops several times during the summer, also visited the Bowron Lake Game Reserve on three occasions.

Conclusion.

On the whole, the present system of game-protection seems satisfactory. There are still individuals who are of the opinion that the game should be administered by a separate department, but, although this may be the ideal arrangement, I think the majority realize that at present it is not feasible.

All of which I respectfully submit.

"D" DIVISION (ATLIN, SKEENA, OMINECA, FORT GEORGE, PEACE RIVER, AND YUKON BOUNDARY DISTRICTS).

By Inspector W. Spiller, Officer Commanding.

Game Animals.

Reports from north of the Stikine River indicate a decrease in the smaller species, due mainly to the increase in cougar and coyotes; south of that the average seems to be maintained. An increase in all species might be looked for, providing a vigorous policy be pursued to exterminate cougar and coyotes.

Fur-bearing Animals.

Little information is now available concerning these animals, due to the fact that most of the royalties on these animals have during the past two years largely been paid and collected in Vancouver instead of in the localities where trapped or taken.

Game Birds.

During the year 1925 pheasants were released on Porcher Island; these have not increased to the extent expected and it is therefore recommended that the experiment be not repeated. On the Queen Charlotte Islands pheasants seem to be doing well. Owing to the mild winter (1925–26) a perceptible increase in grouse was observed, especially along the Canadian National Railway tracks, where during the present winter large numbers have been noticed feeding on wheat spilled from the cars.

Migratory Game Birds.

There still seems to be an increase in geese and ducks, especially on the Skeena River and in the vicinity of Hartley Bay.

Vermin.

All species seem to be on the increase and no doubt, unless checked, will ultimately destroy all other game.

Game-protection.

The N.C.O.'s and men throughout the Division were very active in enforcement, resulting in a 100-per-cent. increase of protection over the year 1925.

Hunting Accidents.

No hunting accidents were reported during the year 1926.

Propagation.

Climatic and other conditions in this Division lend themselves as more suitable for natural rather than artificial development, aided, of course, by destruction of vermin.

Game Reserves.

Five established reserves exist in this Division, namely: No. 2, Fort George; No. 7, Prince George; No. 11, Kunghit Island; No. 12, Atlin; No. 21, Kaien Island.

No. 12, Atlin Reserve, was made to assist propagation in that portion of the Province east of the Alaskan boundary where the Alaskan game authorities also maintained a reserve. In July, 1926, the latter was abolished, and I would therefore recommend that our reserve in that locality be lifted, as the only thing accomplished by its retention is the formation of a reserve in British Columbia to feed Alaskan Territory.

Fur Trade.

By examination of fur-traders' books it is found that a large business is being carried on, competition being very keen in the purchase of raw furs. For example, one fur-trader in Prince Rupert has a contract with an Eastern firm to supply them with 5,000 mink; presumably other traders have orders of a similar nature.

Fur-farming.

Information tends to show that in the near future fur-farming will become an important and lucrative industry. Reports indicate that the spirit of the "Game Act" is being observed by fur-traders and fur-farmers.

Registration of Trap-lines and Guides.

The registration of trap-lines is as yet only in its infancy and a very tedious process. The fact that the Indians in the past have been adverse to recognizing our "Game Act" has created many difficulties. This, thanks to Sergeant Van Dyk's persistency, is being overcome, and, though the registration may take a long time to accomplish in this Division, I feel that, once accomplished, a very stable form of game-protection will thereby be maintained.

Special Patrols.

During the year Sergeant Van Dyk (Divisional Headquarters) made two patrols to the Stikine River, Telegraph Creek, and Juneau, during which much valuable data were gathered. Mileage, 3,100.

In January Constables Dryden and Williams, of Ocean Falls and Bella Coola respectively, performed an eight-day patrol in the southern portion of Prince Rupert District by launch, during which they secured ten convictions under the Act. Mileage, 400.

In February Constables Barber and Forfar, of the Peace River District, made the annual patrol to Fort Nelson, during which some $3,200 was collected in royalties on fur. Mileage, 900.

In June Constable Muirhead (Prince George District Headquarters) patrolled to Two Brothers Lake searching for two missing prospectors and trappers. Although no trace of the missing men could be found, much data were gathered by this officer, who in the course of this patrol encountered innumerable difficulties in a country seldom travelled by a human being. Mileage, 800.

The total mileage covered in these special patrols was 5,200 miles.

New Detachments.

During the year game detachments were established as follows: Fort Nelson, consisting of one Corporal and one Third-class Constable; Fort St. James, one Second-class Constable.

Recommended that the stationing of Constables at McDame and Boundary, Stikine River, be considered.

Acknowledgments.

In closing, I wish to express my appreciation to the N.C.O.'s and men of this Division for the manner in which the "Game Act" has been enforced during the year, also to Sergeant T. Van Dyk for his interest and activity displayed in the tedious work incurred by the registration of trap-lines. This officer has the welfare of game very much at heart.

"E" DIVISION (VANCOUVER, COAST, AND FRASER VALLEY DISTRICTS).

By Staff-Sergeant S. North, Officer Commanding.

Pursuant to instructions received in the Provincial Game Warden's letter of December 31st, 1926, I beg to submit the following report on game conditions in "E" Division, British Columbia Provincial Police, during the year 1926:—

This report, as requested, deals with the following subjects: (1) Game animals; (2) fur-bearing animals; (3) game birds; (4) migratory game birds; (5) vermin; (6) game-protection and hunting accidents; (7) propagation; (8) game reserves; (9) fur trade; (10) fur-farming; (11) registration of trap-lines and guides; (12) special patrols.

Game Animals.

Deer.—From reports submitted by officers and the number of deer killed throughout the past season, it would appear that this species of big game is still on the increase, or at least holding its own. In the 1925 report it was recommended that a short open season be allowed on does, and I again suggest that a short open season would do no harm. In fact, I believe, if an open season on does was granted during the fall of 1927, it would meet with the approval of the majority of the sportsmen and farmers along the coast. It is to be regretted that we have a certain class of so-called sportsmen who do not trouble to ascertain the sex of the animal until after it has been shot. Consequently a large number of does are found lying in the woods. If these hunters were allowed one doe per season it would have a tendency to save the waste of valuable meat. From reports received I am led to believe that the proportion of does seen in the woods in this district would be about ten to one buck.

A number of excellent specimens were secured in the Howe Sound areas, but I deeply regret to have to report that a great number of very poor deer have been taken off Bowen Island and Gambier Island.

Early in April reports were received from Bowen Island advising that a number of deer had been found dead at various points throughout the island, and that in all instances these animals appeared to have suffered from bowel-trouble. An investigation was conducted and both dead and living specimens were secured and forwarded to Dr. E. A. Bruce, Animal Pathologist for the Department of Agriculture, for observation. Dr. Bruce also made an investigation on the island in company with our officers on the launch "Watla" and diagnosed the disease as broncho-pneumonia. During the spring and summer some thirty animals were found dead on the island. Bowen Island is sparsely settled and thickly wooded, and as this number of dead animals were found the total casualties must have been very great. During the open season this fall several

very poor deer were shot and left in the woods on account of their condition. In spite of this malady a large number of splendid deer were secured by the hunters on Bowen Island.

Early in December reports were received from sportsmen at Gibson's Landing, advising that diseased deer had been found on Gambier Island, one of these hunters forwarding a quarter of a buck deer to this office which he had secured on Gambier Island, and which appeared to be full of long thin worms, particularly in the joints and under the skin of the animal. This specimen was forwarded on to Dr. Bruce, who is still investigating this new outbreak. Dr. Bruce reports that the disease found in the animals on Bowen Island has no connection with the alleged disease found on Gambier Island.

The theory is advanced by up-coast sportsmen that the deer on these islands are becoming inbred and that there are too many does, using this argument in their plea for an open season on does. I would again urge that some sort of tag system be inaugurated to keep a check on the deer bag limit. It has been reported that some hunters far exceed the season bag limit of three deer, a regulation which at the present it is impossible to enforce.

Mountain-goat.—From the reports received from coastal officers and sportsmen who take pleasure in hunting these animals, it would appear that they are still holding their own up the coast, with the exception of Powell Lake, where the goat are reported as decreasing. Our officers on the patrol launch "Watla" made a special patrol into the Toba and Bute Inlet Districts early in October, and report seeing a great number of goat at Ramsay Arm and on the mountains on the north side of Toba Inlet. Goat are reported to be increasing around Rivers Inlet District. For some years the goat had disappeared from the McNab Valley in Howe Sound, but a few animals have again been seen during the last season on the hills east of this valley. A few goat were obtained at the head of Stave Lake, but this place is not very popular with the sportsmen owing to the difficulties of getting in and out of the area where the goat are to be found.

Bear.—Grizzly bear can be found at the heads of most of our coastal inlets, but the favourite spot is at the head of Knight Inlet, where they are reported to be fairly plentiful. One grizzly bear was obtained at the head of Jervis Inlet by a party from the State of Washington.

Black bear are very numerous all over the district and the usual number of complaints of destruction by these animals were received from the more settled portions of the Lower Mainland. There has been considerable agitation among some members of sporting associations for the protection of female bear with cubs, but it would be practically impossible to enforce such a regulation if it was passed; still, some steps could be taken to educate the sportsmen to spare the female when they observe one with young. I do not see how this could be done by legislation.

Fur-bearing Animals.

Beaver.—A few beaver can still be found in the southern portion of the Division, along the Campbell River in the Langley District, and in the vicinity of Stave Lake small colonies of these animals are found. At Burnaby Lake, which is a game reserve, we have several colonies. These appear to be increasing, and although complaints of damage done by these animals are being received, they should still be protected in the Lower Mainland, and where it is found that their activities are endangering agricultural interests it is possible to grant a permit to trap them or have the Department employ a trapper to do this work. The beaver in the northern portion of the Division, while not reported to be increasing, are holding their own, and the area north of Jervis Inlet is provided with an open season for the spring of 1927. It is thought that now the registration of trap-lines is becoming an accomplished fact, and each and every trapper is becoming practically the owner of his line, the Department could well continue to allow an open season on beaver throughout the district where there is registration of trap-lines.

Marten.—These animals are not really plentiful in this Division, although some of the trappers make a fair living trapping them. A few of these animals were taken alive for breeding purposes last season, and some preparations are being made to catch them for breeding purposes this season, but as yet the raising of this animal in captivity has not yet proved feasible.

Mink.—In all parts of the Division mink are holding their own. On the Nelson, Captain, and Hardy Island Game Reserves these animals have become so plentiful as to be detrimental to the increase of the grouse on Nelson Island and the pheasants on Hardy Island, so much so that it was recommended to the Game Conservation Board that permits be granted the *bona-fide* settlers in the reserve to trap the shore-lines for mink and coon, which has been done, and should be beneficial to the bird-life of the reserves.

A number of trappers are taking mink alive for breeding purposes, as there is a fair demand for live animals and they are easily caught.

Racoon.—Racoon appear to be holding their own and bringing a good price on the fur market.

Otter.—It cannot be said that these animals are plentiful. Still, the trappers along the coast usually manage to secure a few each season.

Skunk.—The usual number were taken throughout the past year, but are not trapped very extensively.

Muskrat.—These animals are in great demand, both for pelts and breeding purposes. There is such a demand for the live animal that it is almost a shame to pelt them. Prices range from $7 to $25 per pair, but in spite of the demand the majority of trappers still trap with the steel traps, some claiming they can make better at pelting than trapping alive on account of the difficulty of getting a suitable trap to catch these animals. The box trap is used with some success, but is a slow process. There is a wonderful opportunity for some one of a mechanical frame of mind who can invent a really successful live-muskrat trap. The muskrat has about held his own in the last year or so throughout the Fraser Valley and several complaints have been received of these animals doing damage to dykes.

Game Birds.

Pheasants.—The season just past exceeded expectations. During the season of 1925 the pheasant-shooting was very poor in spite of the fact that prior to the opening date they appeared to be very plentiful, but during the season of 1926 the sportsmen received fair hunting and a great number of bag limits were secured; the reason for the large numbers of pheasants, in spite of the incessant hunting, being on account of the very mild winter of 1925–26, followed by a really good breeding season. After the close of the season pheasants appeared to be very plentiful in all parts of the Fraser Valley.

From reports obtained from our officers in the field, quite a few Mongolian pheasants have been obtained and were in excellent condition. The usual reports have been received from the hunters in favour of killing hen birds, of the very great proportion of hens to cocks, and in some instances these reports have been borne out by our Game Wardens; and if breeding conditions are favourable and the sporting associations request a short open season for the fall of 1927, I do not think any great harm would be done in granting the same.

Very few reports of damage to farmers' crops by pheasants have been received in the past two years. A large number of the farmers in the Lower Fraser realize that the pheasant does not do the damage claimed against him and several requests have been received from these farmers for new blood.

Pheasants are reported to be very plentiful on Texada Island. This island has only been provided with an open season during the last few years, and it is encouraging to be able to state that these birds are doing very well, especially at the north end of the island.

Partridge.—The season on these birds was open for ten days in the Delta and Chilliwack Electoral Districts, which comprises the whole of the Mainland south of the Fraser River to the boundary-line, and west of Chilliwack to the Gulf of Georgia. Excellent shooting was obtained in the new area opened around Sumas and a number of bag limits secured. After the season was closed a great number of these birds were observed, which practically proves that this valuable sporting bird has secured a solid footing in the district, and it is to be hoped that the sportsmen will be allowed at least the same length of season for 1927, if not longer.

The partridge on Lulu Island do not appear to be increasing. In fact, only two coveys have been reported during the past fall.

Quail.—Throughout the district these birds appear and are reported to be increasing, due no doubt to the extremely mild winters recently. But it is doubtful whether this class of game bird ever will be able to stand an open season on the Lower Mainland, as the climatic conditions do not appear to be favourable. In the Delta, Point Grey, and North Vancouver Districts some very fine coveys can be found, but as soon as we have a hard winter these birds will again decrease, and it takes several seasons for them to gain the foothold they now have.

The few bob-white liberated in the spring of 1925 seem to have disappeared, with the exception of a covey of about fifteen birds in Point Grey.

Grouse.—Willow-grouse have been fairly plentiful, although nothing like in former years. Some fair bags were procured throughout the Fraser Valley. There always seems to be consider-

able controversy over the opening date on these birds, but personally I am of the opinion that the recommendations of the allied sportsmen of the Lower Mainland should go a long way toward settling the suitable date.

Blue grouse did not show up to expectation during the past season. During 1925 a great many bag limits were secured on Bowen and Gambier Islands, which is the principal blue-grouse country adjacent to Vancouver, but this past season daily bag limits have been very scarce. There are no willow-grouse to be found on either of these islands.

Migratory Game Birds.

Ducks.—The opening of the season on ducks this year was a gala day for the sportsmen. Weather conditions were ideal and had been so for several weeks prior to the opening day. Thousands of ducks were down from the north for the main event of the year, from a sportsman's point of view. Bag limits were in evidence all over the flats along the Gulf of Georgia and in the Fraser River. Some limits were obtained before 8 a.m. Ducks have been very plentiful all through the season, especially at Sumas Prairie and Harrison River. The Pitt Meadows and Delta Districts have also shown up very well in comparison to last season.

Geese.—During the latter part of September and early in October a large number of geese passed through the district going south. A few snow-geese put in an appearance off the Lulu Island shore-line about October 15th, and these numbers increased from day to day until the opening day of November 1st. These birds are very plentiful, and if not increasing at least are holding their own, as it is very rarely that any of these birds are shot.

Brant.—During the latter part of December brant were very plentiful around the Boundary Bay locality and afforded splendid shooting to the few men who hunt these birds. They are also reported to be plentiful off Canoe Pass and some fair bags have been secured here.

Swans.—Reports of several swans having been seen throughout the district from Lulu Island to Sumas Lake area have been received at these headquarters.

Vermin.

Coyotes and red fox are reported to be still on the increase in the Lower Mainland. Several permits have been granted to kill the red fox during the close season throughout the Sumas-Chilliwack Districts, and through the great amount of damage done by these animals to farmers and game it is suggested that they be classed as vermin throughout the Lower Fraser from the Cascade Mountains to the Gulf of Georgia.

Wolves.—Corporal Stone, of the Rivers Inlet Detachment, reports that wolves are very plentiful and doing untold damage to the deer. It has been suggested that permits be granted to trappers to poison these animals in an endeavour to decrease their numbers, but the use of poison is very dangerous, and I would suggest that better results could be obtained through the Department employing professional men to hunt and poison, if necesssary, under proper supervision.

Cougar.—A great many complaints were received from Cortes Island of a cougar which was doing untold damage to the farmers' sheep and the deer, and after several attempts being made to catch this animal it was finally killed by Francis Louis, an Indian of Squirrel Cove, on August 18th.

Crows.—This pest is still increasing throughout the district and is responsible for the destruction of a great number of our game birds and song-birds. A bounty of 10 cents was paid for the destruction of crows during the months of April and May, but this amount did not compensate the sportsmen for the shells used, and the amount of bounty paid out in this Division was almost negligible. There is a slight agitation amongst the sportsmen to have this bounty again put on and increased sufficiently to at least pay for the cost of the ammunition.

Game Protection.

It is gratifying to hear of the favourable comments by notable sportsmen of this district commenting on the efficient patrol-work carried on throughout the past year. This patrol-work has been under the supervision of Corporal J. G. Cunningham, N.C.O. i/c Game Laws Enforcement Branch, and I am pleased to report the splendid co-operation of all our officers in an endeavour to do their utmost in the interests of the game of the Province. Prosecutions in the Division have increased considerably over previous years, due to a large extent to co-operation of members

of the sporting associations, who are willing at all times to help our officers in the protection of the game. Several changes have been made in the personnel of the Game Laws Enforcement Branch throughout the past year, and while some of our best Wardens were transferred to other parts of the Province, still in all instances their places have been filled with very efficient officers.

The following Constables were almost continually engaged on game-protection work during the year 1926: W. H. Cameron, Ladner Detachment; R. M. Stewart, Chilliwack Detachment; E. G. Stedham, Pitt Meadows; J. Murray, Port Moody; J. Moir, North Vancouver; D. C. Campbell, Vancouver; C. Ledoux, Matsqui; J. G. Cunningham, launch "Watla," Vancouver; W. Clark, launch "Watla," Vancouver; A. P. Cummins, Vancouver; F. Urquhart, Surrey.

The following Constables, although not specially detailed for game-work, have given a great deal of their time to this work: F. Boyt, Powell River; G. E. Elliott, Mission; A. J. Collison, Vancouver; A. W. Collins, Agassiz.

All other Police Constables throughout the Division have done their utmost to enforce the "Game Act" and make game law enforcement in the Division a success.

Hunting Accidents.

I am pleased to report that there have been no hunting accidents during the year 1926 in this Division.

Propagation.

A large number of pheasants were received from the Government Pheasant Farm at Victoria early in the year and were liberated in the Chilliwack, Sumas, Ladner, Pitt Meadows, and Lulu Island Districts. A small number of partridges were liberated in the Chilliwack District in March.

Game Reserves.

One new game reserve was created in the Division during the year and is situated in the North Vancouver District. This reserve comprises practically all the watersheds of the Seymour, Lynn, and Capilano Creeks. Grouse, deer, and goat were becoming very scarce on the north shore owing to the proximity of the cities, but with a few years' protection there is no doubt but what this game will return and be a source of pleasure to the citizens of the surrounding cities.

Game is increasing on the Nelson, Captain, and Hardy Island Reserves. Owing to the increase of mink and coon on the reserve, and the damage being done by these animals to the game birds and domestic fowl, permits were granted to *bona-fide* residents on the islands to trap the animals along the shore-line.

During the year of 1925 two mule-deer were sent to Hardy Island and it was hoped that these animals would become acclimatized, but shortly after liberation one of them became sick and in spite of the special attention paid to it by Tom Brazil, the caretaker on the island, it soon died. The second animal also took sick and has since disappeared.

The beaver in the Burnaby Lake Game Reserve are very plentiful for the size of the reserve. A few beaver have now spread out up Still Creek to a point about 2 miles up the creek from the reserve.

Fur Trade.

The practice of stamping fur has been done away with and royalties are now collected upon export or upon being sent to the tanner. This new system is proving successful and is popular with the dealers. Taking the fur trade on the whole, prices and quantity of pelts are reported to have been better than during the previous year.

Fur-farms.

During the past year a large number of new fur-farms have been put into operation throughout the Division. The majority of those issued with permits are commencing on a very small scale. In most instances the farmer is starting out on a small piece of property with from one to six pairs of muskrats. The prospective farmers are leaning heavily toward the raising of these animals on account of the small amount of capital required, with the minimum risk of a failure. At present there is a great demand for the live animals for breeding purposes, and those few muskrat-farmers who have been fortunate in raising young rats have found a ready market for their output at practically their own price.

There are a great number of silver- and blue-fox farmers in the Division. These farmers are required to make returns to Victoria; consequently this Division has not all the information as to the success of these farmers, but it is known through the inspections conducted by our officers that a great many farmers who invested in blue fox have been disappointed in the business. A few of these farmers had fair success, but a great many had no returns whatever from their investment. The silver-fox farmers have been more successful and quite a number of these animals have been pelted. As the regulations now stand, a royalty of $5 is collected on silver fox taken in British Columbia. This tax is protested by the breeders as being unfair on account of the amount, and also as in the majority of cases the original stock had been imported, the owners object to being taxed. The fur-farming industry has a great future and every assistance should be given to this class of business, but as a great number of our native fur-bearing animals, including silver fox, have been caught up for fur-farming, it is only natural that the Government should receive some return for the animals trapped; but I would suggest that the tax on ranch-bred silver fox be reduced.

Registration of Trap-lines.

Many obstacles are being met in the registration of trap-lines throughout the Division, principally in the northern part where the white and Indian trappers intermingle. There have been numerous disputes over priority of rights over lines, but in most instances the Constables in charge of the various detachments have settled these disputes amicably. However, there is a great deal of work yet to be accomplished before the registration of all trap-lines has been perfected. These regulations meet with the whole-hearted approval of the real trappers, who trap the same lines from year to year, but the beach-combing or travelling trappers who move from place to place in a gas-boat, trapping wherever they wish, do not favour the regulations, as they curtail their former freedom, which was very detrimental to the fur-trapping. During the past year a great many applications for registration of trap-lines have been received in this Division.

Registration of Guides.

During the season 1926 only one application for a guide's licence was received throughout this Division.

Special Patrols.

As was in the case in 1925, several special patrols were made. These patrols met with fair success and no doubt from reports received left a good impression with the real sportsmen and the fair-minded citizens in the districts visited. The following special patrols were made:—

(1.) April 15th to 22nd. Vancouver to Nelson Island Reserve, Reynard Island, Bute Inlet District, with the launch "Watla," visiting fur-farms and investigating complaints. Total mileage, 480.

(2.) June 12th to 15th. Gambier Island–McNab Creek, Gibson's Landing. Three convictions netting $70 in fines. Total mileage, 128.

(3.) September 9th to 15th. Nelson Island and Jervis Inlet Districts on the launch "Watla." In previous years complaints had been received from this area of illegal hunting on the Nelson Island Game Reserve during the opening days of the season on blue grouse and deer. No violations of the "Game Act" encountered on this patrol. Total mileage, 426.

(4.) October 5th to 13th. Jervis, Toba, and Bute Inlets, on "Watla." Total mileage, 436.

(5.) November 3rd to 8th. Agassiz and Harrison Lake Districts. Four convictions, netting $80 in fines.

(6.) November 30th to December 11th. Harrison and Stave Lakes. Four convictions, netting $80 in fines and one gun confiscated. Total mileage, 462.

A great many shorter patrols were conducted throughout the year by officers on the "Watla," resulting in a great many convictions and complaints investigated.

Summary.

The past season has been a busy one with the officers in this Division. The registration of trap-lines, the inspection of proposed fur-farms, in addition to the usual patrol-work, all tends to take time and care; but I am pleased to say that, without one exception, I have found the officers willing to co-operate in making the Game Laws Enforcement Branch of this Division

a success. The Game Constables have had the whole-hearted support of their brother officers on the Force, as well as the sportsmen of the district, with excellent results.

Throughout the year the usual complaints have been received and reports of lost licences, and I again strongly urge that some provision be made to cope with this trouble of worn or lost licences, as well as the issuing of a metal tag.

It must be noted that the revenue derived from the sale of firearms licences for 1926 has decreased considerably, in comparison with the revenue from this source in 1925. Part of this decrease is due to the fact that trappers were encouraged to take out their licences in the district of the Province where their line was situated, and partly through the moving of the Game Conservation Board offices to Victoria. A great number of applications for licences were received from residents and non-residents of the Province by mail at the Board office in Vancouver. Such applications in the majority of cases are now dealt with in Victoria. Apart from these reasons, a great many hunters have given up the gun on account of the majority of the land in the district having been gradually taken up by clubs as private shooting-grounds. The need for public shooting-grounds is becoming more and more acute every season, and if this source of revenue is to be kept up the time has now arrived when a portion of the revenue derived should be invested in acquiring some of the bogs or waste land in the Province for the general public to hunt on.

The revenue derived from the royalties collected on fur has increased considerably during the past season, this increase no doubt being due to the change in the collection of royalties. Prior to 1926 royalties were collected as soon as the fur arrived in the hands of the dealers, but now the royalty is not collected until an export permit is required, and consequently a large amount of the revenue is collected in Vancouver that was in former years collected at other points in the Province.

REPORT ON OPERATIONS OF ELK LAKE GAME FARM.

By J. W. Jones, Constable i/c.

I beg to submit my annual report dealing with the operations of the Elk Lake Game Farm and the propagation of game birds thereon.

The farm up to the present is yet incomplete, being in need of one more acre of land to be cleared and an additional battery of pens. These requirements would facilitate better operation of the farm.

During the past year conditions on the farm were very favourable, except that, as it had only been occupied one year, it was more difficult to get settled, and therefore this was somewhat of a detriment to the propagation of game birds, but next year I anticipate much better results.

The following is a statement of the propagation of small game and birds on the farm during the calendar year 1926:—

Pheasants in pens at December 31st, 1926		2,300
Breeding stock consisting of	320	
Strayed from breeding stock	20	
Number of eggs laid		2,900
Set under hens	2,700	
Small late eggs used for feeding young birds	200	
Young pheasants reared		2,400
Now in pens	2,000	
Casualties	300	
Strayed	100	
Muskrats		13
Ducks		30
Geese		10
Marten		1

Vermin destroyed.—Domestic cats, 20; hawks, 10; big-horned owls, 32; total, 62.

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REVENUE DERIVED FROM SALE OF RESIDENT FIREARMS LICENCES, JANUARY 1ST, 1926, TO JUNE 30TH, 1926.

Government Agents.	O.F.L.		G.F.L.		Extra G.F.L.		S.F.L.		Guides.		F.F.L.	P.F.L.	Total.
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	No.	
Alberni	94	$ 235.00	2	$ 10.00	2	$ 20.00	20	$ 200.00	.....	.....	9	19	$ 465.00
Anyox	.....	.....	3	15.00	.....	.....	1	10.00	.....	.....	.....	.....	25.00
Ashcroft	4	10.00	.....	.....	.....	.....	.....	.....	.....	.....	5	7	10.00
Atlin	.....	.....	.....	.....	.....	.....	6	60.00	1	$ 5.00	.....	3	65.00
Clinton	3	7.50	.....	.....	.....	.....	4	40.00	.....	.....	7	1	47.50
Cranbrook	3	7.50	2	10.00	.....	.....	1	10.00	.....	.....	9	20	27.50
Cumberland	103	257.50	4	20.00	5	50.00	36	360.00	.....	.....	141	.....	687.50
Duncan	2	5.00	.....	.....	1	10.00	3	30.00	.....	.....	.....	.....	45.00
Fernie	5	12.50	3	15.00	.....	.....	.....	.....	.....	.....	4	4	27.50
Fort Fraser	5	12.50	.....	.....	.....	.....	21	210.00	.....	.....	13	2	222.50
Golden	2	5.00	3	15.00	.....	.....	5	50.00	1	5.00	7	3	75.00
Grand Forks	1	2.50	.....	.....	.....	.....	2	20.00	.....	.....	3	6	22.50
Kamloops	23	57.50	5	25.00	.....	.....	13	130.00	.....	.....	132	72	212.50
Kaslo	6	15.00	18	90.00	.....	.....	.....	.....	.....	.....	4	59	105.00
Lillooet	1	2.50	2	10.00	.....	.....	.....	.....	.....	.....	.....	1	12.50
Merritt	2	5.00	.....	.....	.....	.....	6	60.00	.....	.....	5	12	65.00
Nanaimo	2	5.00	1	5.00	2	20.00	2	20.00	.....	.....	.....	.....	50.00
Nelson	10	25.00	3	15.00	1	10.00	2	20.00	.....	.....	35	66	70.00
New Westminster	16	40.00	3	15.00	.....	.....	20	200.00	.....	.....	29	10	255.00
Penticton	22	55.00	3	15.00	1	10.00	2	20.00	.....	.....	11	54	100.00
Pouce Coupe	1	2.50	.....	.....	.....	.....	52	520.00	1	5.00	25	.....	527.50
Prince George	3	7.50	6	30.00	.....	.....	56	560.00	2	10.00	26	56	607.50
Prince Rupert	8	20.00	4	20.00	.....	.....	27	270.00	2	10.00	1	29	320.00
Quesnel	.....	.....	2	10.00	.....	.....	8	80.00	.....	.....	22	48	90.00
Revelstoke	5	12.50	7	35.00	.....	.....	3	30.00	1	5.00	7	19	82.50
Rossland	12	30.00	3	15.00	.....	.....	.....	.....	.....	.....	2	14	45.00
Smithers	3	7.50	.....	.....	.....	.....	20	200.00	.....	.....	34	15	207.50
Telegraph Creek	.....	.....	.....	.....	.....	.....	19	190.00	.....	.....	.....	.....	190.00
Vancouver	76	190.00	9	45.00	.....	.....	22	220.00	1	5.00	14	133	460.00
Vernon	28	70.00	14	70.00	1	10.00	4	40.00	.....	.....	26	43	190.00
Victoria	66	165.00	1	5.00	.....	.....	6	60.00	1	5.00	19	11	235.00
Williams Lake	8	20.00	7	35.00	.....	.....	25	250.00	.....	.....	6	21	305.00
Wilmer	1	2.50	.....	.....	2	20.00	.....	.....	.....	.....	.....	18	22.50
Yale	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	28	.....
Totals	515	$1,287.50	105	$525.00	15	$150.00	386	$3,860.00	10	$50.00	597	774	$5,872.50

Revenue derived from Sale of Resident Firearms Licences, July 1st, 1926, to December 31st, 1926.

Government Agents.	O.F.L.		G.F.L.		Extra G.F.L.		S.F.L.		Guides.		F.F.L.	P.F.L.	Total.
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	No.	
Alberni	669	$ 1,672.50	30	$ 150.00	17	$ 170.00	70	$ 700.00	.....	.....	35	1	$ 2,692.50
Anyox	61	152.50	12	60.00	2	20.00	5	50.00	.....	.....	.....	.....	282.50
Ashcroft	173	432.50	24	120.00	7	70.00	21	210.00	.....	.....	7	8	832.50
Atlin	.....	.....	5	25.00	.....	.....	18	180.00	5	$ 25.00	.....	.....	230.00
Clinton	107	267.50	18	90.00	2	20.00	69	690.00	.....	.....	27	12	1,067.50
Cranbrook	618	1,545.00	102	510.00	25	250.00	62	620.00	1	5.00	75	15	2,930.00
Cumberland	1,701	4,252.50	114	570.00	59	590.00	149	1,490.00	2	10.00	221	8	6,912.50
Duncan	811	2,027.50	21	105.00	18	180.00	18	180.00	.....	.....	192	.....	2,492.50
Fernie	432	1,080.00	123	615.00	11	110.00	59	590.00	1	5.00	12	.....	2,400.00
Fort Fraser	111	277.50	47	235.00	2	20.00	154	1,540.00	4	20.00	69	6	2,092.50
Golden	130	325.00	79	395.00	7	70.00	51	510.00	10	50.00	34	4	1,350.00
Grand Forks	171	427.50	4	20.00	.....	.....	16	160.00	.....	.....	17	.....	607.50
Kamloops	897	2,242.50	48	240.00	6	60.00	82	820.00	2	10.00	234	14	3,372.50
Kaslo	142	355.00	57	285.00	6	60.00	44	440.00	.....	.....	17	13	1,140.00
Lillooet	44	110.00	24	120.00	.....	.....	19	190.00	1	5.00	2	2	425.00
Merritt	206	515.00	11	55.00	8	80.00	35	350.00	.....	.....	25	15	1,000.00
Nanaimo	1,568	3,920.00	12	60.00	16	160.00	28	280.00	.....	.....	127	25	4,420.00
Nelson	719	1,797.50	69	345.00	5	50.00	81	810.00	.....	.....	59	24	3,002.50
New Westminster	4,246	10,615.00	112	560.00	18	180.00	103	1,030.00	.....	.....	651	18	12,385.00
Penticton	937	2,342.50	31	155.00	5	50.00	80	800.00	.....	.....	91	20	3,347.50
Ponce Coupe	21	52.50	3	15.00	.....	.....	193	1,930.00	3	15.00	79	6	2,012.50
Prince George	162	405.00	311	1,555.00	25	250.00	235	2,350.00	26	130.00	62	32	4,690.00
Prince Rupert	717	1,792.50	124	620.00	46	460.00	207	2,070.00	.....	.....	12	24	4,942.50
Princeton	83	207.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	207.50
Quesnel	65	162.50	47	235.00	1	10.00	66	660.00	9	45.00	47	16	1,112.50
Revelstoke	284	710.00	84	420.00	.....	.....	85	850.00	3	15.00	18	17	1,995.00
Rossland	409	1,022.50	63	315.00	17	170.00	6	60.00	.....	.....	1	1	1,567.50
Smithers	136	340.00	21	105.00	6	60.00	57	570.00	4	20.00	74	19	1,095.00
Telegraph Creek	.....	.....	6	30.00	3	30.00	40	400.00	11	55.00	.....	.....	515.00
Vancouver	5,445	13,612.50	233	1,165.00	41	410.00	178	1,780.00	3	15.00	141	103	16,982.50
Vernon	2,299	5,747.50	104	520.00	12	120.00	101	1,010.00	.....	.....	371	24	7,397.50
Victoria	2,747	6,867.50	35	175.00	2	20.00	95	950.00	15	75.00	285	20	8,087.50
Williams Lake	114	285.00	42	210.00	.....	.....	126	1,260.00	33	165.00	51	57	1,920.00
Wilmer	81	202.50	26	130.00	4	40.00	40	400.00	5	25.00	6	1	797.50
Totals	26,306	$65,765.00	2,042	$10,210.00	371	$3,710.00	2,593	$25,930.00	138	$690.00	3,042	505	$106,305.00

REVENUE DERIVED FROM SALE OF NON-RESIDENT LICENCES, JANUARY 1ST, 1926, TO JUNE 30TH, 1926.

Government Agents.	General Firearms and Anglers.		Spring Bear.		Season Bird.		Weekly Bird.		Season Anglers.		Daily Anglers.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	
Alberni	....	.....	....	.....	....	.....	....	.....	5	$ 50.00	....	.....	$ 50.00
Ashcroft	1	$ 25.00	....	.....	....	.....	....	.....	1	10.00	....	.....	35.00
Clinton	1	25.00	....	.....	....	.....	....	.....	....	.....	....	.....	25.00
Cranbrook	3	75.00	....	.....	....	.....	....	.....	10	100.00	....	.....	175.00
Cumberland	....	.....	....	.....	....	.....	....	.....	5	50.00	....	.....	50.00
Duncan	....	.....	....	.....	....	.....	....	.....	3	30.00	....	.....	30.00
Grand Forks	5	125.00	....	.....	....	.....	....	.....	....	.....	....	.....	125.00
Kamloops	....	.....	....	.....	....	.....	....	.....	5	50.00	15	$ 63.00	113.00
Kaslo	3	75.00	....	.....	....	.....	....	.....	2	20.00	....	.....	95.00
Nanaimo	....	.....	....	.....	....	.....	....	.....	18	180.00	....	.....	180.00
Nelson	....	.....	....	.....	....	.....	....	.....	6	60.00	....	.....	60.00
New Westminster	....	.....	....	.....	....	.....	....	.....	29	290.00	41	41.00	331.00
Penticton	2	50.00	....	.....	....	.....	....	.....	10	100.00	....	.....	150.00
Prince George	6	150.00	....	.....	....	.....	....	.....	....	.....	....	.....	150.00
Quesnel	2	50.00	....	.....	....	.....	....	.....	....	.....	....	.....	50.00
Revelstoke	2	50.00	....	.....	....	.....	....	.....	2	20.00	....	.....	70.00
Rossland	....	.....	....	.....	....	.....	....	.....	1	10.00	....	.....	10.00
Vancouver	6	150.00	....	.....	....	.....	....	.....	14	140.00	....	.....	290.00
Victoria	4	100.00	....	.....	....	.....	....	.....	39	390.00	....	.....	490.00
Williams Lake	....	.....	....	.....	....	.....	....	.....	2	20.00	....	.....	20.00
Wilmer	1	25.00	....	.....	....	.....	....	.....	....	.....	....	.....	25.00
Totals	36	$900.00	....	.....	....	.....	....	.....	152	$1,520.00	56	$104.00	$2,524.00

Revenue derived from Sale of Non-resident Licences, July 1st, 1926, to December 31st, 1926.

Government Agents.	General Firearms and Anglers.		Spring Bear.		Season Bird.		Weekly Bird.		Season Anglers.		Daily Anglers.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	
Alberni	----	----------	----	----------	----	----------	----	----------	9	$ 90.00	----	----------	$ 90.00
Anyox	----	----------	----	----------	----	----------	----	----------	----	----------	----	----------	----------
Ashcroft	2	$ 50.00	....	.....	....	.....	....	.....	1	10.00	....	.....	60.00
Atlin	4	100.00	----	----------	----	----------	----	----------	----	----------	----	----------	100.00
Clinton	----	----------	----	----------	----	----------	----	----------	1	10.00	----	----------	10.00
Cranbrook	11	275.00	----	----------	----	----------	----	----------	13	130.00	----	----------	405.00
Cumberland	5	125.00	....	.....	....	.....	....	.....	119	1,190.00	....	.....	1,315.00
Duncan	1	25.00	----	----------	----	----------	----	----------	4	40.00	----	----------	65.00
Fernie	13	325.00	....	.....	....	.....	....	.....	9	90.00	....	.....	415.00
Fort Fraser	7	175.00	----	----------	----	----------	----	----------	2	20.00	----	----------	195.00
Golden	16	400.00	----	----------	----	----------	----	----------	----	----------	----	----------	400.00
Grand Forks	5	125.00	----	----------	----	----------	----	----------	5	50.00	----	----------	175.00
Kamloops	3	75.00	----	----------	----	----------	----	----------	8	80.00	----	----------	155.00
Lillooet	----	----------	----	----------	----	----------	----	----------	1	10.00	1	$2.00	12.00
Merritt	1	25.00	----	----------	----	----------	----	----------	----	----------	----	----------	25.00
Nanaimo	8	200.00	----	----------	----	----------	----	----------	42	420.00	----	----------	620.00
Nelson	1	25.00	----	----------	----	----------	----	----------	14	140.00	----	----------	165.00
New Westminster	87	2,175.00	....	.....	....	.....	....	.....	46	460.00	....	.....	2,635.00
Penticton	8	200.00	----	----------	----	----------	----	----------	13	130.00	----	----------	330.00
Pouce Coupe	2	50.00	----	----------	----	----------	----	----------	----	----------	----	----------	50.00
Prince George	27	675.00	----	----------	----	----------	----	----------	2	20.00	----	----------	695.00
Prince Rupert	----	----------	----	----------	----	----------	----	----------	1	10.00	----	----------	10.00
Quesnel	6	150.00	----	----------	----	----------	----	----------	3	30.00	----	----------	180.00
Revelstoke	3	75.00	....	.....	....	.....	....	.....	2	20.00	....	.....	95.00
Smithers	4	100.00	....	.....	....	.....	....	.....	....	.....	....	.....	100.00
Telegraph Creek	13	325.00	....	.....	....	.....	....	.....	....	.....	....	.....	325.00
Vancouver	48	1,200.00	...	.....	....	.....	2	$10.00	43	430.00	....	.....	1,640.00
Vernon	....	----------	....	----------	....	----------	....	----------	2	20.00	....	.....	20.00
Victoria	57	1,425.00	....	----------	....	----------	....	----------	81	810.00	....	----------	2,235.00
Williams Lake	21	525.00	....	----------	....	----------	....	----------	2	20.00	....	----------	545.00
Wilmer	6	150.00	....	----------	....	----------	1	5.00	4	40.00	....	----------	195.00
Totals	359	$8,975.00	....	----------	....	----------	3	$15.00	427	$4,270.00	1	$2.00	$13,262.00

REVENUE DERIVED FROM SALE OF FUR-TRADERS' AND TAXIDERMISTS' LICENCES AND FROM ROYALTY OR TAX ON FUR, JANUARY 1ST, 1926, TO JUNE 30TH, 1926.

Government Agents.	Resident Fur-traders.		Non-resident Fur-traders.		Fur tax.		Taxidermists.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	
Alberni	....	.....	....	.....	97	$ 403.83	....	.....	$ 403.83
Anyox	1	$ 25.00	....	.....	5	16.60	....	.....	41.60
Ashcroft	....	.....	....	.....	16	82.42	....	.....	82.42
Atlin	....	.....	....	.....	20	298.79	....	.....	298.79
Cranbrook	....	.....	....	.....	6	23.92	....	.....	23.92
Cumberland	....	.....	....	.....	18	30.02	....	.....	30.02
Duncan	....	.....	....	.....	8	32.18	....	.....	32.18
Fernie	....	.....	....	.....	1	.40	1	$ 5.00	5.40
Fort Fraser	4	100.00	....	.....	55	1,786.24	....	.....	1,886.24
Golden	....	.....	....	.....	10	36.08	....	.....	36.08
Kamloops	2	50.00	....	.....	4	9.40	....	.....	59.40
Kaslo	....	.....	....	.....	4	1.60	....	.....	1.60
Lillooet	....	.....	....	.....	17	29.44	....	.....	29.44
Merritt	....	.....	....	.....	2	1.13	....	.....	1.13
Nanaimo	....	.....	....	.....	8	13.95	....	.....	13.95
Nelson	....	.....	....	.....	3	3.65	....	.....	3.65
New Westminster	....	.....	....	.....	13	36.57	....	.....	36.57
Penticton	....	.....	....	.....	2	.75	....	.....	.75
Pouce Coupe	9	225.00	....	.....	157	7,324.83	....	.....	7,549.83
Prince George	5	125.00	....	.....	146	7,096.44	....	.....	7,221.44
Prince Rupert	6	150.00	....	.....	61	1,583.69	....	.....	1,733.69
Quesnel	....	.....	....	.....	49	722.45	....	.....	722.45
Revelstoke	....	.....	....	.....	22	487.42	1	5.00	492.42
Smithers	1	25.00	....	.....	22	219.60	....	.....	244.60
Telegraph Creek	5	125.00	....	.....	32	582.37	....	.....	707.37
Vancouver	9	225.00	....	.....	249	19,031.14	2	10.00	19,266.14
Vernon	....	.....	....	.....	5	7.67	....	.....	7.67
Victoria	2	50.00	....	.....	35	217.83	....	.....	267.83
Williams Lake	4	100.00	....	.....	8	32.27	....	.....	132.27
Wilmer	....	.....	....	.....	1	.80	....	.....	.80
Totals	48	$1,200.00	....	.....	1,076	$40,113.48	4	$20.00	$41,333.48

REVENUE DERIVED FROM SALE OF FUR-TRADERS' AND TAXIDERMISTS' LICENCES AND FROM ROYALTY OR TAX ON FUR, JULY 1ST, 1926, TO DECEMBER 31ST, 1926.

Government Agents.	Resident Fur-traders.		Non-resident Fur-traders.		Fur-tax.		Taxidermists.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	
Alberni	3	$ 75.00	----	----------	10	$ 17.46	----	----------	$ 92.46
Anyox	1	25.00	----	----------	1	4.50	----	----------	29.50
Ashcroft	1	25.00	----	----------	2	6.00	----	----------	31.00
Atlin	3	75.00	----	----------	42	237.44	----	----------	312.44
Clinton	4	100.00	----	----------	----	----------	----	----------	100.00
Cranbrook	3	75.00	----	----------	5	4.80	1	$ 5.00	84.80
Cumberland	----	----------	----	----------	1	.20	----	----------	.20
Duncan	----	----------	----	----------	1	1.10	----	----------	1.10
Fernie	----	----------	----	----------	3	27.80	1	5.00	32.80
Fort Fraser	27	675.00	----	----------	16	194.64	----	----------	869.64
Golden	----	----------	----	----------	4	2.70	----	----------	2.70
Kamloops	2	50.00	----	----------	2	3.81	1	5.00	58.81
Kaslo	----	----------	----	----------	1	.75	----	----------	.75
Lillooet	1	25.00	----	----------	7	6.70	----	----------	31.70
Merritt	2	50.00	----	----------	----	----------	----	----------	50.00
Nanaimo	----	----------	----	----------	1	2.45	----	----------	2.45
Nelson	1	25.00	----	----------	4	23.15	----	----------	48.15
New Westminster	1	25.00	----	----------	13	36.57	----	----------	61.57
Penticton	----	----------	----	----------	1	12.00	----	----------	12.00
Pouce Coupe	16	400.00	----	----------	50	3,604.24	----	----------	4,004.24
Prince George	27	675.00	----	----------	32	1,118.54	1	5.00	1,798.54
Prince Rupert	17	425.00	----	----------	16	485.99	----	----------	910.99
Princeton	----	----------	----	----------	2	13.65	----	----------	13.65
Quesnel	10	250.00	----	----------	23	338.83	1	5.00	593.83
Revelstoke	1	25.00	----	----------	9	234.41	1	5.00	264.41
Smithers	10	250.00	----	----------	14	25.37	----	----------	275.37
Telegraph Creek	2	50.00	----	----------	10	40.95	----	----------	90.95
Vancouver	15	375.00	1	$200.00	134	7,401.92	----	----------	7,976.92
Vernon	3	75.00	----	----------	3	9.64	----	----------	84.64
Victoria	18	450.00	2	400.00	14	2,028.35	3	15.00	2,893.35
Williams Lake	16	400.00	----	----------	4	14.25	----	----------	414.25
Wilmer	1	25.00	----	----------	4	33.44	----	----------	58.44
Totals	185	$4,625.00	3	$600.00	449	$15,931.65	9	$45.00	$21,201.65

PARTICULARS OF VARIOUS SKINS ON WHICH ROYALTY HAS BEEN PAID, JANUARY 1ST, 1926, TO JUNE 30TH, 1926.

Government Agents.	Bear.	Beaver.	Coyote.	Fisher.	Fox, Silver.	Fox, Cross.	Fox, Red.	Lynx.	Marten.	Mink.	Muskrat.	Otter.	Racoon.	Weasel.	Wildcat.	Wolf.	Wolverine.	Skunk.
Alberni	1	.....	.....	.....	.....	.....	.....	.....	105	691	.....	70	631	86	.....	.....	.....	.....
Anyox	.....	.....	.....	.....	.....	.....	.....	.....	1	58	.....	.....	.....	20	.....	.....	1	.....
Ashcroft	47	.....	.....	1	.....	.....	.....	.....	61	.....	.....	.....	.....	36	.....	.....	.....	.....
Atlin	7	48	.....	1	.....	12	49	150	.....	210	132	9	.....	88	.....	.....	17	.....
Cranbrook	6	15	.....	.....	.....	.....	.....	.....	.....	.....	116	.....	.....	4	.....	.....	.....	3
Cumberland	.....	.....	.....	.....	.....	.....	.....	.....	9	54	.....	7	22	4	.....	.....	.....	.....
Duncan	.....	.....	.....	.....	.....	.....	.....	.....	24	17	.....	.....	15	81	.....	.....	.....	.....
Fort Fraser	11	838	.....	42	16	80	84	190	91	848	2,020	27	.....	1,463	.....	.....	3	29
Golden	1	.....	.....	.....	1	.....	.....	19	12	11	.....	.....	.....	56	.....	.....	.....	.....
Kamloops	1	.....	1	1	.....	.....	.....	.....	6	.....	.....	.....	.....	9	.....	.....	2	.....
Kaslo	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lillooet	8	.....	19	.....	.....	.....	.....	.....	19	5	.....	.....	.....	66	1	.....	.....	.....
Merritt	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11	.....	.....	.....	.....
Nanaimo	.....	.....	.....	.....	.....	.....	.....	.....	5	21	.....	.....	37	.....	.....	.....	.....	.....
Nelson	1	.....	.....	.....	.....	.....	.....	.....	.....	13	.....	.....	.....	.....	.....	.....	.....	.....
New Westminster	.....	.....	.....	.....	.....	.....	2	.....	26	6	95	.....	4	30	.....	.....	.....	15
Penticton	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	1	.....	.....	1
Pouce Coupe	102	886	.....	143	98	751	1,049	1,850	1,831	1,110	3,011	5	.....	2,039	.....	3	31	71
Prince George	67	3,840	.....	109	14	86	226	465	494	3,691	11,527	70	9	5,824	.....	6	15	105
Prince Rupert	31	576	.....	33	2	7	6	23	189	2,525	281	50	52	333	.....	.....	8	6
Quesnel	12	380	.....	36	5	28	19	46	26	176	1,272	8	.....	28	.....	.....	2	5
Revelstoke	10	124	.....	20	9	30	36	26	102	148	439	9	73	479	1	.....	6	2
Smithers	7	90	.....	6	3	12	8	9	36	101	92	1	.....	168	.....	.....	.....	1
Telegraph Creek	2	400	.....	1	2	8	3	16	76	111	27	8	.....	99	.....	.....	12	.....
Vancouver	358	5,740	.....	352	149	654	663	1,673	4,036	10,777	22,909	350	3,441	15,719	19	.....	92	460
Vernon	4	.....	.....	.....	.....	.....	.....	2	.....	11	9	.....	.....	16	.....	1	1	1
Victoria	1	.....	.....	1	2	7	12	7	28	296	142	11	375	36	.....	.....	1	.....
Williams Lake	.....	.....	.....	1	1	.....	1	28	3	7	.....	.....	.....	92	.....	.....	.....	.....
Wilmer	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	685	12,937	20	747	302	1,675	2,158	4,504	7,180	20,889	42,072	625	4,659	26,787	22	10	191	699

PARTICULARS OF VARIOUS SKINS ON WHICH ROYALTY HAS BEEN PAID, JULY 1ST, 1926, TO DECEMBER 31ST, 1926.

Government Agents.	Bear.	Beaver.	Coyote.	Fisher.	Fox, Silver.	Fox, Cross.	Fox, Red.	Lynx.	Marten.	Mink.	Muskrat.	Otter.	Racoon.	Weasel.	Wildcat.	Wolf.	Wolverine.	Skunk.
Alberni	.....	.....	.....	.....	.....	.....	.....	.....	2	18	.....	9	19	2	.....	.....	.....	.....
Anyox	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ashcroft	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Atlin	9	182	.....	.....	.....	4	15	9	5	60	30	3	.....	117	.....	22	2	.....
Cranbrook	1	.....	21	.....	.....	.....	.....	2	.....	6	.....	.....	.....	15	.....	.....	.....	.....
Cumberland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Duncan	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	.....	.....	1	.....	.....	.....	.....	.....
Fernie	.....	.....	.....	.....	.....	.....	.....	4	23	.....	.....	.....	.....	30	.....	.....	1	.....
Fort Fraser	23	52	.....	1	8	17	2	14	9	53	589	1	.....	42	.....	.....	2	.....
Golden	3	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kamloops	.....	.....	.....	2	.....	.....	.....	1	.....	.....	.....	.....	.....	2	.....	.....	.....	.....
Kaslo	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lillooet	3	.....	10	.....	.....	1	.....	.....	1	1	.....	.....	.....	.....	1	.....	.....	.....
Nanaimo	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	22	.....	.....	.....	.....	.....
Nelson	3	.....	.....	.....	.....	.....	.....	.....	18	14	.....	.....	.....	15	.....	.....	.....	.....
Penticton	.....	.....	.....	.....	.....	.....	.....	.....	12	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pouce Coupe	79	525	167	47	37	248	366	1,109	799	377	1,133	7	.....	569	.....	1	23	16
Prince George	360	481	.....	20	10	66	53	8	47	56	141	9	8	227	.....	5	.....	7
Prince Rupert	38	49	29	11	3	4	5	30	222	417	237	10	26	204	.....	.....	2	2
Princeton	.....	.....	11	.....	.....	.....	.....	3	17	2	.....	.....	.....	36	.....	.....	.....	.....
Quesnel	10	121	.....	16	2	19	19	18	45	54	510	8	.....	177	.....	.....	6	5
Revelstoke	12	1	.....	3	8	10	1	42	65	143	119	6	34	662	.....	.....	1	4
Smithers	4	.....	.....	2	1	3	1	.....	6	2	.....	.....	.....	134	.....	.....	.....	.....
Telegraph Creek	3	9	.....	2	4	2	2	.....	3	1	.....	.....	.....	.....	.....	.....	.....	.....
Vancouver	236	3,865	10	146	35	109	137	1,554	797	1,676	3,328	96	287	1,667	.....	1	73	60
Vernon	2	.....	.....	.....	.....	.....	.....	.....	8	.....	.....	.....	.....	28	.....	.....	.....	.....
Victoria	18	255	.....	41	9	65	121	943	643	347	44	9	62	150	.....	.....	24	5
Williams Lake	1	1	7	.....	.....	.....	.....	.....	.....	2	223	.....	.....	40	.....	.....	.....	.....
Wilmer	.....	.....	.....	.....	.....	.....	.....	7	18	35	.....	.....	.....	48	.....	.....	.....	.....
Totals	820	5,541	255	291	117	551	723	3,746	2,740	3,269	6,354	158	461	4,165	1	29	134	99

BOUNTIES PAID DURING THE YEAR ENDED DECEMBER 31ST, 1926.

Government Agents.	Wolves.	Cougars.	Coyotes.	Crows.	Totals.
Alberni	------	13	----------	82	$ 528.20
Ashcroft	1	------	839	10	1,694.00
Atlin	5	------	368	----------	811.00
Clinton	------	------	1,478	20	2,958.00
Cranbrook	------	------	254	816	589.60
Cumberland	5	20	----------	86	883.60
Duncan	------	5	----------	69	206.90
Fernie	------	9	58	----------	476.00
Fort Fraser	2	------	1,282	----------	2,594.00
Golden	------	17	181	818	1,123.80
Kamloops	------	7	949	376	2,215.60
Kaslo	------	1	22	----------	84.00
Lillooet	------	2	31	----------	142.00
Merritt	------	------	340	16	681.60
Nanaimo	------	9	----------	45	364.50
Nelson	------	11	86	1,454	757.40
New Westminster	3	2	9	66	149.60
Prince Rupert	107	------	39	417	1,724.70
Pouce Coupe	12	2	2,511	----------	5,282.00
Penticton	23	36	478	225	2,763.50
Prince George	8	------	1,472	----------	3,064.00
Quesnel	2	3	645	33	1,443.30
Revelstoke	2	2	314	20	740.00
Rossland	------	2	6	----------	92.00
Smithers	4	------	382	----------	824.00
Telegraph Creek	53	------	475	----------	1,745.00
Victoria	1	7	----------	41	299.10
Vancouver	108	19	471	486	3,370.60
Vernon	------	16	255	690	1,219.00
Williams Lake	------	------	1,125	----------	2,250.00
Totals	336	183	14,070	5,770	$41,077.00

Recapitulation.

Wolves, 336 at $15 each	$ 5,040.00
Cougars, 183 at $40 each	7,320.00
Coyotes, 14,070 at $2 each	28,140.00
Crows, 5,770 at 10 cents each	577.00
Total	$41,077.00

LIST OF FUR CONFISCATED FOR INFRACTIONS OF THE "GAME ACT," JANUARY 1ST, 1926, TO DECEMBER 31ST, 1926.

Date of Confiscation.	Confiscated from.	Confiscated at.	Police Division.	Pelts.						
				Beaver.	Mink.	Muskrat.	Marten.	Otter.	Racoon.	Weasel.
1926.										
Feb. 13	Adirim, N.	Nanaimo	"A"	....	1	....	....	....	2	....
Aug. 10	Bon, W.	Courtenay	"A"	4	....	....	....	....	....	....
Sept. 13	Carson, P.	Alberni	"A"	....	....	....	....	....	1	....
Jan. 27	Fisher, J.	Cranbrook	"B"	5	1	2	....	....	....	3
,, 8	Moses, I.	Wilmer	"B"	....	1	....	....	....	....	2
March 25	Williamson, P.	Penticton	"B"	9	....	....	....	....	....	....
Nov. 17	Wilde, W.	Salmo	"B"	4	....	....	....	....	....	....
Dec. 8	Milne, B.	West Summerland	"B"	....	....	7	....	....	....	....
,, 13	Noren, C. S.	Christian Valley	"B"	2	....	....	....	....	....	....
,, 9	Francois, W. S.	Wilmer	"B"	....	....	1	....	....	....	....
,, 22	Wilson, W.	Westwold	"C"	1	1	....	....	....	....	....
Feb. 19	Julian, W.	Prince Rupert	"D"	12	11	20	1	1	....	....
March 31	Conradson, B.	Smithers	"D"	....	....	34	....	....	....	7
May 4	Prince, F.	Fort St. James	"D"	2	....	....	....	....	....	....
,, 27	Beatton, F. W.	Fort St. John	"D"	4	....	....	....	....	....	....
,, 22	Machadeah, Chief	Hudson Hope	"D"	1	....	....	....	....	....	....
Oct. 20	Pierroway, P.	Prince George	"D"	....	....	3	....	....	....	....
Nov. 12	Joe, A.	Chilliwack	"E"	....	1	....	....	....	2	....
Dec. 3	Tamboline, J.	Ladner	"E"	....	....	2	....	....	....	....
,, 21	Noble, F.	Ladner	"E"	....	....	8	....	....	....	....
	Totals			44	16	77	1	1	5	12

List of Firearms confiscated for Infractions of the "Game Act," January 1st, 1926, to December 31st, 1926.

Date of Confiscation.	Confiscated from.	Confiscated at.	Police Division.	Kind confiscated.
1926.				
March 6	Hoo, T.	Campbell River	"A"	1 rifle.
May 17	Green, T.	Nanaimo	"A"	1 auto. shotgun.
June 18	Boomer, J.	Nanaimo	"A"	1 shotgun.
,, 26	Moore, R. S.	Campbell River	"A"	1 pump shotgun.
July 19	Lundy, W.	Ganges	"A"	1 shotgun.
,, 24	MacCrostie, Dr. J. R.	Courtenay	"A"	1 22 rifle.
Aug. 21	Aura, S.	Campbell River	"A"	1 rifle.
,, 21	Ikada, T.	Campbell River	"A"	1 rifle.
,, 27	Maxwell, F.	Ganges	"A"	1 shotgun.
Sept. 10	Wow, L.	Royston	"A"	1 44-cal. rifle.
,, 24	Frank, J. (Indian)	Victoria	"A"	1 auto. shotgun.
,, 24	Manning, H. J.	Nanaimo	"A"	1 pump shotgun.
Oct. 2	Parker, G.	Campbell River	"A"	1 shotgun.
May 11	Fisher, J.	Cranbrook	"B"	1 rifle.
,, 29	Anderson, O.	Nakusp	"B"	1 shotgun.
Aug. 23	Bavin, R.	Wilmer	"B"	1 rifle.
,, 23	Kostseletsky, K. K.	Wilmer	"B"	1 22 rifle.
Sept. 24	Le Grande, E.	Athalmer	"B"	1 22 pistol.
Aug. 23	Anderson, G.	Vernon	"C"	1 shotgun.
,, 30	Newman, J.	Salmon Arm	"C"	1 22 rifle.
Nov. 13	Bertucci, C.	Kelowna	"C"	1 shotgun.
Feb. 15	Owen, R. W.	Ocean Falls	"D"	1 pump shotgun.
,, 10	Christenson, S.	Ocean Falls	"D"	1 shotgun.
,, 15	Wheeler, E.	Ocean Falls	"D"	1 pump shotgun.
,, 8	Wheeler, H. W.	Ocean Falls	"D"	1 pump shotgun.
March 6	Wedge, J.	Ocean Falls	"D"	1 rifle.
July 12	Burk, E. J.	Pouce Coupe	"D"	1 rifle.
Aug. 26	Bedell, J. P.	Pouce Coupe	"D"	1 22 pistol.
Feb. 4	Sue, B.	Port Coquitlam	"E"	1 rifle.
May 29	Kawanishi, S.	Alert Bay	"E"	1 shotgun.
Oct. 9	Bain, L.	Ladner	"E"	1 shotgun.
,, 18	Tokunatsu, H.	Vancouver	"E"	1 auto. shotgun.
,, 19	De La Giroday, E.	Chilliwack	"E"	1 shotgun.
,, 19	Hindle, A.	Chilliwack	"E"	1 shotgun.
,, 19	Lee, W.	Chilliwack	"E"	1 shotgun.
,, 27	Borne, A.	Ladner	"E"	1 revolver.
Nov. 9	Barr, W.	Vancouver	"E"	1 pump shotgun.
,, 17	St. Lawrence, J.	Port Moody	"E"	1 revolver.
Dec. 11	Sanura, I.	Mission	"E"	1 pump shotgun.

Firearms confiscated: Shotguns, 23; rifles, 12; revolvers, 4; total, 39.

HUNTING ACCIDENTS, JANUARY 1ST, 1926, TO DECEMBER 31ST, 1926.

Date.	Name.	Locality.	Cause of Accident.	Nature of Injuries.	Inflicted by.	Result of Accident.
1926.						
Jan. 24	Roberts, E.	Cloverdale	Accidental	Shot in chest	W. C. McAdam	Died.
April 5	Sam, A. (Indian)	Chua Chua	Accidental	Shot in neck	Self	Not serious.
July 24	Pidcock, R.	Oyster River	Accidental	Shot in right arm	Dr. J. R. MacCrostie	Not serious.
Sept. 11	Syme, C.	Crofton	Accidental	Shot in head	J. C. Horton	Died.
,, 21	Shaw, D.	Terrace	Accidental	Shot in shoulder	Self	Not serious.
,, 25	Barry, J.	Mill Creek	Accidental	Shot in leg and chest	Self	Serious.
,, 26	Cressy, T. C.	Merritt	Accidental	Shot in wrist	J. Halinan	Died.
Nov. 8	Fisher, R.	Duncan	Accidental	Shot in thigh, bullet entering heart	Self	Died.
,, 21	Francis, J. L. M.	Nelson	Accidental	Shot in chest	J. Clelland	Died.

List of Guides, Season 1926.

Atlin District.

Cole, C. B.	Atlin.	Noland, J. W.	Atlin.
Lemieux, L. O.	,,	Auston, A. R.	Toochi.
Murphy, N.	,,		

Cassiar District.

Brooks, N.	Telegraph Creek.	Frank, B.	Telegraph Creek.
Creyne, J.	,,	Henyu, P.	,,
Dick, L.	,,	Jackson, D.	,,
Decker, L.	,,	Lawrence, C.	,,
Escardi, A.	,,	Williams, M.	,,
Fann, B.	,,		

Fort George District.

Colebank, G. F.	Hixon Creek.	Bowen, F.	Red Pass.
Moski, S.	Fort St. James.	Smith, J. M.	,,
McCorkell, B.	,,	Woods, L. N. W.	Prince George.
McNeill, J. N.	Wistaria.	Hooker, J. B.	Dome Creek.
Goodel, O. D.	McBride.	Jensen, E. H.	,,
Goodel, W. R.	,,	Jensen, E. W.	,,
Lamma, L. L.	,,	Cochrane, R. R.	Croydon.
Sweeney, W.	,,	Biernes, G. M.	Hazelton.
Wylie, R. M.	,,	Hiamadow, T.	,,
McDonald, F. J.	,,	Holland, J.	Telkwa.
Allgier, L.	Mount Robson.	Pierre, P.	,,
Abram, E.	,,	Dick, H.	Shelley.
Brittain, H.	,,	Crowley, D.	Swift Creek.
Hargreaves, F. N.	,,	Case, D.	Tete Jaune Cache.
Hargreaves, G. E.	,,	Hamilton, R.	Burns Lake.
Hargreaves, R. F.	,,	Mulvaney, B.	,,
Hargreaves, R. S.	,,	Purjue, O.	Redstone.

Barkerville District.

Wendel, J.	Bear Lake.	Mason, H.	Barkerville.
Booth, L. E. R.	Barkerville.	Reed, F. W.	,,
Cochrane, J. D.	,,	Thompson, N. W.	,,
Duffy, J. C.	,,	Thompson, R.	,,
Kew, J. E.	,,	Thompson, W. E.	,,

Kamloops District.

Glover, G. M.	Clearwater Station.	Ray, J. B.	Clearwater.

Lillooet District.

Farey, A. E.	Lillooet.	Manson, W. M.	Lillooet.
Janus, J.	,,	Fletcher, J.	Pavilion.
Prosser, G. E.	,,	Stewart, J. H.	,,
Moore, K. B.	Tatla Lake.	Lindsey, N. M.	Shalalth.

Kootenay District.

Nesbitt, E.	Beaton.	Stevens, P. V.	Wasa.
Harrison, G. H.	Hector.	Weidenman, O. W.	Palliser.
MacDonnell, R.	Invermere.	Hiren, N. O.	Revelstoke.
Nixon, W. J.	,,	Larsen, O. B.	,,
Stork, W.	Fort Steele.	Munro, J. H.	,,
Gilbert, F.	Field.	Krivensky, J.	Elk Prairie.
Thomas, G.	,,	Canning, R. F.	Sheep Creek.

Kootenay District—Continued.

Sheek, W. P.	Castledale.	Lightbown, J. H.	Golden.
Boiven, W.	Natal.	Lawrence, C. G.	„
Couillard, H. E.	„	Nixon, W. W.	Radium Hot Springs.
McGinnis, E.	„	Schofield, B.	Windermere.
Dainard, C. J.	Golden.	Tegart, W.	„
Fenz, W.	„	Kain, C.	Wilmer.
Haesler, C.	„	Yearling, W.	Athalmer.
Lightbown, D.	„	Frearson, A.	Fernie.

Nanaimo District.

Smith, J. C.	Comox.	Sutherland, G.	Campbell River.
Forbes, J.	Campbell River.		

Peace River District.

Belcourt, J.	Big Slough.	MacLadean, J.	Hudson Hope.
Hunter, T.	Hudson Hope.	Thomas, J.	„

Quesnel District.

Fletcher, J.	Keithley Creek.	Stephenson, A.	Likely.
Kirby, C. B.	„	Tilton, R. M.	„
Bremner, C.	Likely.	Shaw, J.	Quesnel Forks.
Collins, J. M.	„	Felker, W. L.	Horsefly.
Dewees, R. G.	„	Hockley, G.	„
Dickson, F.	„	Loetgen, C.	„
Girwood, J. B.	„	MacEachern, R. H.	„
Hamilton, M.	„	Patenaude, G. B.	„
Johnson, J.	„	Parminter, J. W.	„
Larsen, L.	„	Hooker, F. S.	„
Meniser, D. L.	„	Hooker, T. O.	„
McLeese, P.	„	Reid, W. H.	„
McCarthy, G.	„	Stevenson, O. J.	„
McGregor, H.	„	Walters, L.	„
McGee, T.	„	Walters, G.	„
Phillips, M.	„	Gaspard, E.	„
Parminter, R.	„		

Vancouver District.

Mansell, F.	North Vancouver.	Utterstrom, J.	Vancouver.
Sykes, B. S.	Abbotsford.	Williams, A. B.	„

RECORD OF BIG GAME IN THE CASSIAR, 1926.

(Compiled by the Provincial Game Department per H. W. Dodd, Government Agent.)

Licence No.	Hunter.	Guide.	Licence No.	Locality.
2537	Harper, Dr. H. C., New Castle, Pa.	Chas. Lawrence	1449	Did not hunt (unwell).
2538	Cottom, H. Tom, New Orleans	Loo Decker	1448	Nahlin.
2539	Jermyn, W. S., Scranton, Penn.	Billy Fann	1450	Nahlin-Nakina.
2540	Downey, J. J., Oswego, N.Y.	Escardi	1626	Nahlin-Nakina.
2541	Boyd, R. H., New York	Little Dick	1627	Shesley-Nahlin.
2542	Frost, C. S., New York	Mike Williams	1628	Shesley-Nahlin.
2543	Briggs, Geo. S., Santa Anna, Cal.	John Creyke	1629	Shesley-Nahlin.
2544	Timmons, Howard, Santa Anna, Cal.	Dick Jackson	1630	Shesley-Nahlin.
2545	Robb, Thomas, Philadelphia	Pete Henyu	1631	Klappan.
2546	Newbold, C. B., Philadelphia	Benny Frank	1632	Klappan.
2547	Evans, Thomas, Philadelphia	Billy Fann, 2	1450	Iskoot Lakes.
2548	Darwin, Gilbert, New York	Escardi, 2	1626	Iskoot Lakes.
2549	Sanford, Gertrude	Ned Brooks	1633	Iskoot Lakes.

RECORD OF BIG GAME IN THE CASSIAR, 1926—*Continued.*

MOOSE.				CARIBOU.				GOAT.			SHEEP.				GRIZZLY BEAR.		BLACK BEAR.	
No.	Spread.	Palm.	Points.	No.	Spread.	Length.	Points.	No.	Length.	Base.	No.	Spread.	Length.	Base.	No.	Size.	No.	Size.
....	.....	.....	....	....	....	.....	....	....	.....	.....	....	.....	.....	.....	....	.....	....	.....
1	49¾	29 by 10½	22	2	46	53	29	2	9½	5¼	2	24	40	13¾	1	Medium	....	.....
1	46½	29¾ by 12	28	2	43	50½	26	2	10	5½	3	27½	35	13¼	1	Large	3	Medium
1	52¾	33½ by 14½	41	2	45	52¾	37	2	10½	5½	3	28¾	32	13¾	1	Medium	....	.....
1	48	38¼ by 14½	34	2	34½	50⅜	36	2	9¾	5½	2	23¾	33½	14½	2	8′ 0″	1	6′ 11½″
1	55	43 by 13½	34	2	47	50½	31	2	9½	5¾	....	.....	.....	.....	1	Medium	....	.....
1	54¾	29 by 14½	31	2	37½	52	32	....	.....	.....	....	.....	.....	.....	1	Medium	....	.....
1	56¾	34 by 12¾	31	2	44½	57	44	1	9	5	2	21¾	37	14½	....	.....	....	.....
1	52½	25½ by 15	33	1	42½	54	38	2	9¾	5½	2	25½	40½	13¾	2	Medium	1	6′ 8″
1	47½	25 by 12½	27	2	39½	52	29	2	11	6	2	25	38	14¼	2	Medium	1	Small
....	.....	.....	....	1	37½	46½	30	2	10	5⅞	2	23	34	12	....	.....	....	.....
1	49½	35½ by 12½	28	....	.....	.....	....	2	10½	5¾	2	23½	34	13½	....	.....	1	Small
1	54½	30 by 8½	25	....	.....	.....	....	2	10	6	2	26	36	13½	....	.....	....	.....

Weather conditions very fine throughout.

RETURNS FROM 760 HOLDERS OF TRAPPERS' LICENCES, SHOWING THE BIG GAME, FUR-BEARING ANIMALS, AND NOXIOUS BIRDS KILLED.

Big Game.

Bear	196
Deer	443
Caribou	54
Moose	183
Mountain-goat	78
Mountain-sheep	2
Wapiti (elk)	.....

Fur-bearing Animals.

Beaver	2,577
Fox	526
Fisher	249
Lynx	1,173
Marten	2,107
Muskrats	13,985
Mink	4,907
Otter	193
Racoon	1,162
Skunk	103
Weasel	12,540
Wolverine	49

Noxious Animals.

Coyotes	384
Cougar	16
Wolves	8

BIG-GAME TROPHY FEES PAID, JANUARY 1ST, 1926, TO DECEMBER 31ST, 1926.

Name and Address.	Species.									Amount.
	Bear, Grizzly.	Bear, Black or Brown.	Caribou.	Deer, Mule.	Deer, Coast, etc.	Mountain-goat.	Moose.	Mountain-sheep.	Wapiti (Elk).	
Ashcroft—										
Hogan, E. F., Randolph, N.Y.	1	....	1	....	....	....	....	....	....	$ 50.00
Hogan, F., Randolph, N.Y.	....	1	1	....	....	....	....	....	....	40.00
Hogan, F., Jr., Randolph, N.Y.	....	....	1	....	....	....	....	....	....	25.00
Atlin—										
Bergland, E. L., Wilmington, Del.	....	1	2	....	....	1	1	1	....	130.00
Bergland, W. S., Wilmington, Del.	....	1	2	....	....	1	1	2	....	155.00
Barkerville—										
Groves, E. E., Gaslonia, N.C.	1	....	....	....	....	....	....	....	....	25.00
Groves, L. C., Gaslonia, N.C.	....	1	....	....	....	....	....	....	....	15.00
Stewart, H. F., Pasadena, Cal.	....	....	....	....	....	....	1	....	....	25.00
Lee, R. E., San Bernardino, Cal.	....	....	1	....	....	....	....	....	....	25.00
Lee, A. B., Redlands, Cal.	....	....	1	....	....	....	....	....	....	25.00
Widby, E. J., Wenatchee, Wash.	1	1	....	....	....	....	1	....	....	65.00
Rindsfoos, Wm., Columbus, Ohio	....	....	1	....	....	1	1	....	....	65.00
Harley, C. S., Seattle, Wash.	1	....	1	....	....	....	....	....	....	50.00
Gray, H. S., San Francisco, Cal.	1	....	1	....	....	....	1	....	....	75.00
Bowman, T. W., Seattle, Wash.	1	....	1	....	....	....	....	....	....	50.00
Cranbrook—										
Hichcock, F.	1	....	....	....	....	....	....	....	....	25.00
Thompson, Dr. A. B., Spokane, Wash.	1	....	....	....	....	....	....	....	....	25.00
Clifford, R., New York	1	....	....	....	....	1	....	....	....	40.00
Clifford, B., Minneapolis, Minn.	....	....	....	....	....	1	....	....	....	15.00
White, J. G., Walla Walla, Wash.	....	....	....	....	....	2	....	1	....	55.00
Bennington, V. D., Ritzville, Wash.	....	....	....	1	....	2	....	1	1	95.00
Cumberland—										
Sutherland, G. W., Seattle, Wash.	....	....	....	....	3	....	....	....	....	15.00
Clinton—										
Gaudy, O. M., Seattle, Wash.	....	....	....	....	....	....	1	....	....	25.00
Moser, C. J., Grant's Pass, Ore.	....	....	1	....	....	....	....	....	....	25.00
Fernie—										
Kettering, O. L., Greensburg, Penn.	1	....	....	....	....	2	....	1	1	105.00
Copeland, C. D., Greensburg, Penn.	....	1	....	....	....	1	....	1	1	80.00
Jones, J. W., Bristol, Tenn.	1	....	....	....	....	1	....	....	1	65.00
Stoneroad, J. T., Pittsburgh, Penn.	....	....	....	....	....	....	....	1	....	25.00
Rigall, F. H., Twin Butte, Alta.	....	....	....	....	....	2	....	....	....	30.00
Fort Fraser—										
Rogers, R., New York	2	....	1	....	....	2	....	....	....	105.00
Rogers, M., New York	1	....	....	....	....	2	....	....	....	55.00
Bedaun, F. L., New York	....	....	....	....	....	1	....	....	....	15.00
Bedaun, C. L., New York	....	....	2	....	....	2	....	....	....	80.00
Parker, O. A., Roscoe, Montana	....	....	....	....	....	1	....	....	....	15.00
Golden—										
Houston, D. F., Kimball, W.V.	....	....	....	1	....	2	1	....	1	95.00
Kelso, C. N., Dayton, Ohio	....	....	....	....	....	2	....	....	1	55.00
Lamb, F. H., Cincinatti, Ohio	....	....	....	....	2	2	1	....	1	90.00
Hanger, H., New York	....	....	....	....	....	2	....	....	1	55.00
Cromwell, J., New York	....	....	....	....	....	2	....	1	....	55.00
Leahy, G. D., Murray Bridge, Aus.	....	....	....	....	....	2	....	....	....	30.00
Grand Forks—										
Neace, C. E., Waitsburg, Wash.	1	....	....	....	....	....	....	....	....	25.00
Lillooet—										
McDonald, D. K., Seattle, Wash.	....	....	....	....	1	....	....	1	....	30.00
Hinckley, K., Seattle, Wash.	....	....	....	....	....	....	....	1	....	25.00
New Westminster—										
Silver, C. W., Everett, Wash.	....	....	....	....	3	....	....	....	....	15.00
Nanaimo—										
Jolin, C. J., Seattle, Wash.	....	....	....	....	1	....	....	....	....	5.00
Aust, F., Chehalis, Wash.	....	....	....	....	1	....	....	....	....	5.00

BIG-GAME TROPHY FEES PAID, JANUARY 1ST, 1926, TO DECEMBER 31ST, 1926—*Continued.*

Name and Address.	Species.									Amount.
	Bear, Grizzly.	Bear, Black or Brown.	Caribou.	Deer, Mule.	Deer, Coast, etc.	Mountain-goat.	Moose.	Mountain-sheep.	Wapiti (Elk).	
Nanaimo—*Continued.*										
Quick, H. B., Chehalis, Wash.	....	....	....	....	1	....	....	....	....	$ 5.00
Morrison *et al.*, R. A., Warn Beach, Wash.	....	....	....	....	6	....	....	....	....	30.00
Prince Rupert—										
Mullendore, H., Harper, Kansas	1	....	....	....	....	....	....	....	....	25.00
Mackay, M. S., Tenafly, N.J.	1	....	....	....	....	....	....	....	....	25.00
Pouce Coupe—										
Kenny, Dr. H. R., Chicago, Ill.	1	....	....	....	....	2	....	1	....	80.00
Snyder, H., Chicago, Ill.	....	....	2	....	....	....	....	1	....	75.00
Carr, J. R., Morristown, Pa.	....	....	1	....	....	2	....	1	....	80.00
Keyser, J. C., Collegeville, Pa.	....	....	1	....	....	2	....	....	....	55.00
Prince George—										
Woodward, R. W.	....	....	1	....	....	1	....	....	....	40.00
Watson, E. F., New York	1	....	....	....	....	....	....	....	....	25.00
Kemp & Clooman, Pontiac, Mich.	....	4	....	....	....	....	....	....	....	60.00
Payne, Dr. R. L., Norfolk, Va.	1	2	....	....	....	....	....	....	....	55.00
Nash, W. K., Cleveland, Ohio	1	....	1	....	....	2	....	....	....	80.00
Curless, J., Liberal, Miss.	....	1	1	....	....	....	....	....	....	40.00
Thompson, E., Louisville, Penn.	1	....	1	....	....	....	....	1	....	75.00
Thompson, Mrs. E., Louisville, Penn.	....	....	....	....	....	....	....	1	....	25.00
Wolf, E. R., Miami, Fla.	....	....	....	....	....	....	1	....	....	25.00
Robinson, L. A., New York	2	....	....	....	1	....	....	....	....	55.00
Stimpson, S. C., Oklahoma	....	2	....	....	....	....	1	....	....	55.00
Jensen, P., Ranger, Texas	....	....	....	....	....	....	1	....	....	25.00
Morrison, J. P., Oklahoma	....	....	....	....	....	....	1	....	....	25.00
King, C. J., Cleveland, Ohio	1	....	1	1	....	1	....	....	....	80.00
Swarthout, O. R., San Bernardino	1	....	1	....	....	....	1	....	....	75.00
Gentry, J. D., San Bernardino	....	....	1	....	....	1	1	....	....	65.00
Cadmus, E., Bloomfield, N.J.	....	....	....	....	....	1	1	....	....	40.00
Hagedora, O., Portland, Ore.	....	....	....	....	....	1	1	....	....	40.00
Swartz, H. W., Montpelier, Ohio	1	....	....	....	....	....	....	....	....	25.00
Martin, C. J., Miami, Fla.	....	....	2	....	....	....	1	....	....	75.00
Cobb, J., Middlesborough	....	....	1	....	....	1	1	....	....	65.00
Whitcomb, E., Armhurst, Mass.	....	....	1	....	....	1	....	....	....	40.00
Wright, A., Toledo, Ohio	....	....	....	....	....	....	....	1	....	25.00
Beayer, E., Toledo, Ohio	....	....	1	....	....	1	....	....	....	40.00
Wright, Miss M., Toledo, Ohio	....	....	....	....	....	....	1	....	....	25.00
Quesnel—										
McNutt, J. F., Spokane, Wash.	....	....	1	1	....	....	....	....	....	40.00
Mills, H. W., San Bernardino	....	....	....	....	....	....	1	....	....	25.00
Ewing, R. C., San Bernardino	....	....	2	....	....	....	1	....	....	75.00
Cambern, R., Spokane, Wash.	....	....	....	....	....	....	1	....	....	25.00
Smithers—										
Zappettini, E. J., San Francisco	1	....	....	....	....	....	....	....	....	25.00
Hoeppner, C. H., New York	1	....	....	....	....	....	....	....	....	25.00
Clements, J., Boston, Mass.	1	2	....	....	....	1	1	....	....	95.00
Bodwell, W. J., Sanford, Maine	....	....	1	....	....	1	....	....	....	40.00
Telegraph Creek—										
Tom, C. H., New Orleans	1	....	2	....	....	2	1	2	....	180.00
Jermyn, W. S., Scranton, Penn.	1	3	2	....	....	2	1	3	....	250.00
Downey, J. J., Oswego, N.Y.	1	....	2	....	....	2	1	3	....	205.00
Boyd, R. H., New York	2	1	2	....	....	2	1	2	....	220.00
Frost, C. S., New York	1	....	2	....	....	2	1	....	....	130.00
Briggs, G. S., Santa Anna, Cal.	1	....	2	....	....	....	1	....	....	100.00
Timmons, H., Santa Anna, Cal.	....	....	2	....	....	1	1	2	....	140.00
Robb, T., Philadelphia	2	1	1	....	....	2	1	2	....	195.00
Newbold, C. B., Philadelphia	2	1	2	....	....	2	1	2	....	220.00
Evans, T., Philadelphia	....	....	1	....	....	2	....	2	....	105.00
Darwin, G., New York	....	1	....	....	....	2	1	2	....	120.00
Sanford, G., New York	....	....	....	....	....	2	1	2	....	105.00

BIG-GAME TROPHY FEES PAID, JANUARY 1ST, 1926, TO DECEMBER 31ST, 1926—*Continued.*

Name and Address.	Species.									Amount.
	Bear, Grizzly.	Bear, Black or Brown.	Caribou.	Deer, Mule.	Deer, Coast, etc.	Mountain-goat.	Moose.	Mountain-sheep.	Wapiti (Elk).	
Vancouver—										
Ingalls, Dr., San Francisco	....	....	....	....	....	....	1	....	....	$ 25.00
Prince, Dr. L. O., San Francisco	1	2	....	....	....	....	1	....	....	80.00
Patton, Dr. R. F., New Center, Mass.	1	1	1	....	....	....	1	....	....	90.00
Falconer, Dr. E. H., San Francisco	1	....	....	....	....	....	....	....	....	25.00
Marquardt, F., Chicago, Ill.	1	....	1	....	....	....	1	....	....	75.00
Roncovieri, A., San Francisco	1	....	....	....	....	....	1	....	....	50.00
Rathye, F. C., Chicago, Ill.	....	....	1	....	....	....	1	....	....	50.00
Burke, F. L., Fresno, Cal.	....	....	1	....	....	....	....	....	....	25.00
Cosner, M., Fresno, Cal.	....	....	2	....	....	....	....	....	....	50.00
Moore, R. W., Deland, Fla.	....	....	....	....	....	....	1	....	....	25.00
Cobbs, T., Santa Barbara	....	1	....	....	....	....	....	....	....	15.00
Fleming, A. S., Portland, Ore.	....	....	1	....	....	....	1	....	....	50.00
Honeyman, T. D., Portland, Ore.	....	....	....	....	....	....	1	....	....	25.00
Leadbetter, T. W., Portland, Ore.	....	....	....	....	....	....	1	....	....	25.00
Hill, R. L., Miami, Fla.	....	....	2	1	....	....	1	....	....	90.00
Crosby, L. L., Everett, Wash.	....	....	....	....	....	1	....	....	....	15.00
Hawkins, E. E., Bellingham, Wash.	....	....	....	....	1	....	....	....	....	5.00
Victoria—										
Purdy, P. A., Seattle, Wash.	....	....	....	....	1	....	....	....	....	5.00
Ward, R., Seattle, Wash.	....	....	....	....	1	....	....	....	....	5.00
Bird, S. E., Seattle, Wash.	....	....	....	....	1	....	....	....	....	5.00
Holzworth, J. M., White Plains, N.Y.	1	....	....	....	....	....	....	2	....	75.00
Wilmer—										
Huffman, B., Rockeport, Ind.	....	....	....	....	....	....	....	....	1	25.00
Kincaid, C. O., Rockeport, Ind.	....	....	....	....	....	....	1	....	....	25.00
Everett, R. W., Brevard, N.C.	....	....	....	....	2	2	1	....	1	90.00
Hart, G. W., Brevard, N.C.	....	1	....	....	1	1	....	....	1	60.00
Wagner, W., New York	1	....	....	....	....	....	....	....	1	50.00
Van Vleck, E. A., New York	....	....	....	1	....	1	....	....	....	30.00
Smith, E. L., New York	1	....	....	....	....	1	....	....	....	40.00
Cummings, O. P., New York	....	....	....	1	....	1	1	....	....	55.00
Kellogg, Dr., New York	....	....	....	....	....	....	....	....	1	25.00
Williams Lake—										
Doudona, F., New York	....	....	2	....	....	2	1	....	....	105.00
Sarton, J. J., New York	....	....	1	....	....	2	1	....	....	80.00
McClellan, Ted, Los Angeles	1	1	....	....	....	....	....	....	....	40.00
McClellan, Mrs. T., Los Angeles	1	....	1	....	....	....	....	....	....	50.00
Wurtzburger, G. W., Los Angeles	1	....	2	....	....	....	....	....	....	75.00
Bourmet, J.	1	1	....	....	....	1	....	....	....	55.00
Leo Wolf, C. G., Niagara Falls, N.Y.	....	....	....	2	....	....	....	1	....	55.00
Whitten, B. L., Miami, Fla.	1	....	....	....	....	....	1	....	....	50.00
Howard, H., Memphis, Tenn.	....	3	1	1	....	....	....	....	....	85.00
Totals	54	34	71	10	26	86	52	42	13	$7,880.00

PROSECUTIONS (PROVINCIAL POLICE DIVISIONS), JANUARY 1ST, 1926, TO DECEMBER 31ST, 1926.

Description of Offence.	See FOOT-NOTE. "A" Division.	"B" Division.	"C" Division.	"D" Division.	"E" Division.	Dismissals.	Convictions.	Total No. of Cases.	Fines or Penalties imposed.
Game Animals.									
Buying moose head and horns	....	....	....	....	....	1	....	1	.....
Exporting game without a permit	....	1	....	1	....	....	2	2	$ 35.00
Exceeding bag limit on game	....	....	3	....	....	....	3	3	45.00
Game on premises of shop, logging camp, etc.	3	2	2	....	1	1	8	9	185.00
Hunting deer between sunset and sunrise	1	....	....	....	1	1	2	3	125.00
Keeping game animals in captivity without permit	....	....	....	1	....	....	1	1	25.00
Killing or having game animals in possession of the female sex	3	3	2	1	2	....	11	11	310.00
Killing or hunting game during close season	1	....	5	1	....	1	7	8	160.00
Killing or having pelts of fur-bearing animals in possession during close season	3	5	2	8	3	3	21	24	450.00
Non-resident hunting big game without a guide	....	2	....	....	1	....	3	3	150.00
Possession of game during close season	3	2	2	5	1	4	13	17	275.00
Possession of deer under 1 year of age	2	....	3	1	2	....	8	8	782.00
Running deer with dogs	1	....	....	....	....	1	1	2	10.00
Shooting game while acting as a guide	....	1	....	....	....	1	1	2	10.00
Game Birds.									
Allowing dogs to hunt game birds during close season	3	....	....	....	1	....	4	4	50.00
Game birds on premises of shop, etc.	1	....	....	....	2	....	3	3	35.00
Hunting game birds from power-boat	1	....	1	....	1	....	3	3	50.00
Hunting game birds in prohibited area	7	....	....	....	7	....	14	14	200.00
Hunting upland game birds between sunset and sunrise	....	1	4	....	....	....	5	5	40.00
Killing or hunting upland game birds during close season	5	....	4	....	6	1	15	16	550.00
Killing or hunting migratory birds during close season	3	1	....	....	6	....	10	10	280.00
Possession of upland game birds during close season	5	2	3	1	10	....	21	21	440.00
Possession of migratory birds during close season	....	....	....	5	8	....	13	13	170.00
Selling or offering for sale game birds	....	....	....	....	1	....	1	1	40.00
Setting traps for game birds	....	....	1	....	....	....	1	1	25.00
Licences.									
Buying fur without a licence	1	....	....	1	....	....	2	2	50.00
Carrying firearms without a licence	14	14	11	10	19	8	68	76	675.00
Failing to produce licence on request	2	....	....	....	....	....	2	2	20.00
Guiding without a licence	....	1	....	....	....	....	1	1	10.00
Killing game without a licence	1	2	....	1	....	1	4	5	110.00
Non-resident carrying firearms without a licence	2	1	....	....	4	....	7	7	350.00
Non-resident angling without a licence	2	....	1	....	4	....	7	7	110.00
Using another person's licence	....	....	1	....	....	2	1	3	50.00
Firearms.									
Carrying firearms in or discharging same from an automobile or other vehicle	19	1	3	....	16	1	39	40	410.00
Carrying pump shotgun not properly plugged	2	1	....	4	2	....	9	9	95.00
Carrying or discharging firearms in restricted area	1	2	....	....	1	2	4	6	80.00
Discharging firearms on or across a highway	....	....	....	....	5	....	5	5	50.00
Possession of an automatic shotgun	2	....	....	....	1	....	3	3	30.00
Trapping.									
Interfering with a licensed trap-line	....	....	....	4	....	4	4	8	40.00
Trapping without registering trap-line	....	....	1	....	....	....	1	1	Sus. sentence
Trapping or carrying traps without a licence	....	....	1	7	1	6	9	15	120.00

PROSECUTIONS (PROVINCIAL POLICE DIVISIONS), JANUARY 1ST, 1926, TO DECEMBER 31ST, 1926 —*Continued.*

Description of Offence.	*See* FOOT-NOTE. "A" Division.	"B" Division.	"C" Division.	"D" Division.	"E" Division.	Dismissals.	Convictions.	Total No. of Cases.	Fines or Penalties imposed.
Trapping—Continued.									
Trapping during close season	....	....	....	7	4	1	11	12	$ 80.00
Trapping on a game reserve	....	1	....	2	....	....	3	3	25.00
Trapper refusing to give information to Constable	....	....	....	1	....	....	1	1	10.00
Miscellaneous.									
Being a guide did fail to report an infraction	....	....	1	....	....	....	1	1	10.00
False information to an officer	....	....	1	1	....	....	2	2	20.00
Failing to keep record-book of fur purchased	....	....	....	1	....	....	1	1	60.00
Hindering an officer while in pursuit of his duty	1	1	....	....	....	....	2	2	15.00
Trespassing in pursuit of game	....	1	1	....	15	1	17	18	170.00
B.C. Special Fishery Regulations.									
Catching sturgeon under 3 feet in length	....	....	....	....	1	....	1	1	20.00
Exceeding bag limit on trout	....	2	3	....	....	....	5	5	40.00
Fishing or possessing trout during close season	....	2	3	....	....	....	5	5	35.00
Fishing with salmon-roe in prohibited waters	1	....	....	....	1	....	2	2	30.00
Fishing for or selling salmon or trout without a permit	2	1	1	....	3	....	7	7	45.50
Killing salmon in spawning-grounds	1	....	....	....	....	....	1	1	15.00
Illegally fishing with gill-nets	2	....	....	....	1	1	3	4	30.00
Jigging salmon or netting trout	3	....	2	....	....	3	5	8	22.00
Taking trout under 8 inches in length	5	7	3	....	2	....	17	17	144.50
Unlawfully catching ling-cod or bass	1	2	....	....	....	....	3	3	20.00
Gaol Sentences.									$7,454.00
Carrying firearms without a licence	....	1	....	....	1	....	2	2	2 weeks each.
Killing game or game birds during close season	....	....	....	1	1	....	2	2	2 weeks each.
Possession of game during close season	....	1	1	....	1	....	3	3	1, 2 weeks; 1, 30 days.
Possession of pelts of fur-bearing animals illegally	....	1	....	1	....	....	2	2	2 weeks each.
Pit-lamping	2	....	....	....	....	....	2	2	1, 30 days; 1, 90 days.
Shooting ducks from a power-boat	1	....	....	....	....	....	1	1	10 days.
Trapping during close season	....	1	....	1	....	....	2	2	1, 10 days; 1, 30 days.
Unlawfully selling sturgeon	....	....	....	....	1	....	1	1	30 days.
Totals	107	63	66	66	137	44	439	483	----------

NOTE.—"A" Division: Vancouver Island area. "B" Division: Kootenay and Boundary areas. "C" Division: Kamloops, Yale, Okanagan, Cariboo, and Clinton areas. "D" Division: Atlin, Skeena, Omineca, Fort George, Peace River, and Yukon Boundary areas. "E" Division: Vancouver, Coast, and Lower Mainland areas.

Fur-farm Returns, 1926.

Name and Address.	Foxes.											Total Foxes on hand.	Other Fur-bearing Animals.									
	Red.		Cross.		Silver.		Blue.		Died.	Killed.	Sold.		Beaver.	Coyote.	Fisher.	Lynx.	Marten.	Mink.	Muskrat.	Otter.	Raccoon.	Skunk.	Weasel.
	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.															
Perry, John and Peter, Nootka	....	....	....	....	....	.....	8	12	2	....	.....	18	....	....	....	....	....	.....	.....	....	....	....	....
Willock & Sons, Duncan	....	....	....	....	2	.....	10	.....	.....	....	.....	12	....	....	....	....	....	.....	.....	....	....	....	....
Harper, Noel G., Kamloops	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	2	....	....	1	....
*Freding, Hans, Jura	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Henton, David, 2606 Waltham St., Burnaby	....	....	....	....	.....	.....	3	.....	1	....	.....	2	....	....	....	....	....	.....	.....	....	....	....	....
Haven Fur & Feather Farm (Miller Higgs & Sons), Galiano Island	....	....	....	....	6	4	7	.....	.....	1	.....	16	....	....	....	....	....	.....	.....	....	....	....	....
Peterson, M., Campbell River	....	....	....	....	.....	.....	6	6	.....	....	.....	12	....	....	....	....	....	.....	.....	....	....	....	....
Mould, Geo., Whonnock	....	....	....	....	.....	.....	4	.....	.....	....	.....	4	....	....	....	....	....	.....	.....	....	....	....	....
Floyer, E. A.; Rogers, N. I., Waneta	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Freding, E. N., Princeton	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	12	....	....	....	....
Brawn, H. G., Chemainus	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	1	.....	....	....	....	....
*Somers, R. C., Cheam View	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Lulu Island Fox & Fur Farm (Mrs. K. A. Moody), Cambie Station, Lulu Island	....	....	....	....	22	14	.....	.....	6	....	.....	30	....	....	....	....	....	.....	.....	....	....	....	....
McRae, D. S., 1340 Delbruc Ave., North Vancouver	....	....	....	....	.....	.....	4	.....	.....	....	.....	4	....	....	....	....	....	.....	.....	....	....	....	....
Thomas, H. H., Princeton	....	....	....	....	4	7	.....	.....	.....	....	.....	11	....	....	....	....	....	.....	.....	....	....	....	....
Heywood, E. P., P.O. Box 495, Victoria	....	....	....	....	.....	.....	2	.....	.....	....	.....	2	....	....	....	....	....	.....	.....	....	....	....	....
Mitchell, W. N.; Reid, H. D., P.O. Box 1031, Victoria	....	....	....	....	6	6	.....	.....	6	....	.....	6	....	....	....	....	....	.....	.....	....	....	....	....
Minthamee Blue Fox Ranch, Harrop	....	....	....	....	.....	.....	18	2	1	....	.....	19	....	....	....	....	....	.....	.....	....	....	....	....
†Grant, H. A., Armstrong	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
*Old, G. B. and F., Needles	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Condon, J. E., West Vancouver	....	....	....	....	.....	.....	6	.....	.....	....	.....	6	....	....	....	....	....	.....	.....	....	....	....	....
Norie, H. A., Cowichan Station	....	....	....	....	2	3	.....	.....	.....	....	.....	5	....	....	....	....	....	.....	.....	....	....	....	....
Rist, A. W., cor. Sixth and Inglewood, West Vancouver	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Nicolls, Geoffrey, Arcadia, Crofton	....	....	....	....	6	.....	.....	.....	4	....	.....	2	....	....	....	....	....	.....	.....	....	....	....	....
Bailiff, J.; Jordan, R. A., Alta Lake	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	12	.....	.....	....	....	....	....
Icke, H. A., Rock Mount, Colquitz, Victoria	....	....	....	....	2	2	.....	.....	.....	....	.....	4	....	....	....	....	....	.....	.....	....	....	....	....
Frache, Mrs. G. H., Grand Forks	....	....	....	....	8	5	.....	.....	.....	....	.....	13	....	....	....	....	....	.....	.....	....	....	....	....
Pollock, W. J., Kimberley	....	....	....	....	26	27	.....	.....	6	1	.....	46	....	....	....	....	....	.....	.....	....	....	....	....
Graham, W. F., Grand Forks	....	....	....	....	4	8	.....	.....	8	....	.....	4	....	....	....	....	....	.....	.....	....	....	....	....
Peterson, Carl, Campbell River	....	....	....	....	.....	.....	2	.....	.....	....	.....	2	....	....	....	....	....	.....	.....	....	....	....	....

*Murray, Geo., Willowford																									
Chisholm, Ross, Rosedale																				5	16				
Loucks, W. L., R.R. 1, Aldergrove							4						4												
*Whiteacre, J. G., 738 Granville St., Vancouver																									
Haywood, V. W., 4697 Queens Ave., Vancouver					8	5							13												
Gleason Bros., Dome Creek							8		2				6												
Oulton, Geo., Smithers					2								2												
York, Nelson, Cedar P.O., V.I.							2		1				1												
Jeffrey, W. S., Francois Lake																					50				
Williamson, Dr. F. M., 192 Queens Ave. E., North Vancouver					2								2												
Howey, H. M., Langley Prairie																					7				
Riverside Nurseries, Grand Forks					6	6			2				10												
Powles, Com. J. C., Wilmer					8	12							20	10							200				
*Kain, Conrad, Wilmer																									
*Chamberlain, H. F. and C. B., Parksville																									
Adie, D. C., Owl Creek																		3							
Olsen, Dr. M. L., Duncan					4	4	4	13					25												
Robertson, Chas. H., R.R. 2, Chilliwack					10	6							16												
*Logan, A. W., Brisco																									
Huffman, A. H., Stuart Lake					2				1				1	2											
Richards, O. S. (Blue Stone Ranch), Aldergrove					2	2			2				2												
Virostko, Geo., Extension	2												2												
Bi_lund, C.; Simonds, F. L., Quick																				3					
Shaw, A. J., R.R. 2, New Westminster																		5	1						
Saranovich, R. V., Sheraton			4	3					2				5												
Roland, W. F.; Pierson, Gus, Bella Coola							4						4												
Seebach, E. A.; Huble, A. J., Prince George																3									
Western Canada Magic Silver Black Fox Co., Chilliwack					150		2						152												
Rist, Wm., Streatham																				6					
Freeman-Williams, F. C. P., Box 186, Duncan							6						6												
Stearns, R. G., Burns Lake					2				1				1											2	
Warnock, M., Pender Harbour																									
Bang, Henry, McMurphy																1									
Stringer, Benj., Ecoole							20	20	1	1			38												
Willowmere Fox & Fur Ranch (J. L. Sayers, Mgr.), Port Haney					3					1			2												
Crawford, Mrs. A. B., Willow River			4		4								8												
Texada Fur Farm, Ltd., Texada Island							2						2								50				
Rallison, R., R.R. 3, Nanaimo					1								1												
Seymour Valley Fur Farm (Yates, Stanley; Forrest, S. R.), North Vancouver					4	6	4	10					24												
*Forbes, James, Campbell River																		1							

* No animals on hand. † Cancelled.

FUR-FARM RETURNS, 1926—*Continued.*

Name and Address.	Foxes.											Total Foxes on hand.	Other Fur-bearing Animals.									
	Red.		Cross.		Silver.		Blue.		Died.	Killed.	Sold.		Beaver.	Coyote.	Fisher.	Lynx.	Marten.	Mink.	Muskrat.	Otter.	Racoon.	Skunk.	Weasel.
	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.															
Bibby, E. C.; Thomson, A. B., Aleza Lake	....	....	2	....	.....	.....	.....	.....	.....	....	.....	2	....	....	....	....	....	.....	.....	....	....	....	....
Bennett, Jos. E. (Glen Craibenn Fur Farm), Mcbride	....	....	....	....	4	5	.....	.....	5	....	.....	4	2	....	....	....	....	.....	.....	....	....	....	....
*Roberts, Hugh, Rock Bay	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Mathison, Major P., Canford	....	....	....	....	8	12	.....	.....	6	7	.....	7	....	....	....	....	....	.....	.....	....	....	....	....
Larkey, U. S., Clearwater Station	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	50	....	....	2	....
*Wolfenden, Stanley, Brisco	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
*Hunt, E. A., Box 88, Abbotsford	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Hodgins, H. M., 4637 Hastings St. E., Vancouver	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	2	.....	.....	....	....	....	....
Corry, F. C., c/o Mr. Durrance, Royal Oak, V.I.	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Little, F. G., C. W., and A. W., Prince George	....	....	....	....	.....	.....	4	.....	.....	....	.....	4	....	....	....	....	....	.....	2	....	....	....	....
*Hallett, A. D., Masset	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
*Clayton, Mrs. L. R., Eburne P.O.	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Thomas, N. Gordon, Royston Station	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Palmer, L. C., East Pine River, Arras	3	4	3	4	1	1	.....	.....	2	....	.....	14	....	....	....	....	....	.....	8	....	....	....	....
*Groner, Bruce, Arras	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Canadian Furs, Ltd., 726 Rogers Bldg., Vancouver (Rendezvous Island)	....	....	....	....	.....	.....	4	.....	.....	....	.....	4	....	....	....	....	....	.....	.....	....	....	....	....
*Walker, G. F., Sapperton	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Ballence, Clarence, East Wellington	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	2	....	....
Johnston, R., West Summerland	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	20	....	....	....	....
Lawson, O. C., Telkwa	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	2	.....	....	....	....	....
*Lokken, J., Agerton P.O.	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	7	....	....	....	....
Haynes, Mrs. Alice, Chilco	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	7	.....	....	....	....	....
Mollett, P. C., Fulford Harbour	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	7	.....	....	....	....	....
Jenkins, M., Kelowna	....	....	....	....	10	4	.....	.....	.....	....	.....	14	....	....	....	....	....	.....	.....	....	....	....	....
Dewdney, Alfred, Kelowna	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	250	....	....	....	....
Lott, H. S., Kelly Lake Ranch, Clinton P.O.	....	....	....	....	9	7	.....	.....	.....	....	5	11	....	....	....	....	....	.....	.....	....	....	....	....
Marples, J. E. (Marples Fox & Fruit Farm). Hilliers, V.I.	....	....	....	....	8	.....	4	8	2	....	.....	18	....	....	....	....	....	.....	.....	....	....	....	....
Cowichan Fox Co., Duncan	....	1	....	2	6	.....	.....	.....	1	3	.....	3	....	....	....	....	....	.....	.....	....	....	....	....
Naylor, H. W., 618 Yates St., Victoria	....	....	....	....	.....	.....	7	10	.....	....	.....	17	....	....	....	....	....	.....	4	....	....	....	....
Hird, J. A. (Tumbo Island Fur Farm), 1395 64th W., Vancouver	....	....	....	....	.....	.....	114	70	25	....	51	108	....	....	....	....	....	24	.....	....	....	....	....

†Parker, A., 418 Howe St., Vancouver																								
Ransford, J. A., Box 313, Steveston																		16	7					
Tyner, Mrs. W., Lower Nicola					40					1		39												
Philp, M. D., Simpson St., Sapperton, New Westminster					10	7				1		16												
Cameron, P. E., Duncan, V.I.						9					2	7												
Prescott, C. A., 47 San Juan Avenue, Victoria					4	3						7												
Rosedale Silver Black Fox Co., Victoria					76	74			9			141												
McParlon, G. E., Waldo																			30					
Vancouver Blue Fox Farm (Johniser, W. J.), Lochdale P.O.							2					2									1			
Gregson, A. D., Courtenay																	4	7						
Stanlake, Alvin, 3530 Fromme Rd., North Vancouver, Lynn Creek P.O.					12	7			2			17												
Blair, H. G., Box 652, Kelowna					14	11			1			24												
*Sutherland, W. C. and H. S., Galena P.O., via Golden																								
Bruce, Rev. M. W. J., "Llwyn-y-mor," Mount Newton Cross Rd., Saanich, V.I.					4	5			3			6												
*Piper, R., Kilkerran																								
Johnston, J. M. (Nechako Black Silver Fox Ranch), Vanderhoof					6	12						18												
Fowler, J. J., Great Glacier, via Wrangell, Alaska																	5	20						
Willowby Fur Farm (A. C. M. Danielson), Kelowna																			600					
Harrison, S. S., Blue River																	4							
Sederberg, H., Malakwa																			4					
Hoppe, F., 3822 Eaton St., Vancouver																	3							
Bernard, G. M., Parksville																			2		4			
McCaffery, D., Princeton																		5						
*Caffery, F., East Sooke, V.I.																								
Kearsley, A. E., Stave Falls																		2						
Liden, F. A., Campbell River																								
McClement, W. J., R.R. 3, Cloverdale					14	19						33												
Halland, N. H., Chief Lake	2		3	2	11	4			9		2	13						2	150					
Sandifer, Geo., Ootsa Lake	1		1		2							4												
Copeland, F. C. (Centre Fox Farm), Okanagan Centre					17	11			1	1		26												
Henry, Eli, Telkwa					4	3			2	1		4												
Green, W. W. (Greendale Fox Ranch), Princeton					12	16				10	2	16												
Morrison, W. B., Royal Oak, V.I.			12		39	14			1	3	20	41												
Lamey, D., Woodpecker					5	4			2			7												
*Mohr, E. J., Wistaria																								
Thompson, N. W., Barkerville							4					4												
Laverdiere, Noel, Atlin																								

* No animals on hand. † Cancelled.

FUR-FARM RETURNS, 1926—*Continued.*

Name and Address.	Foxes.											Other Fur-bearing Animals.										
	Red.		Cross.		Silver.		Blue.															
	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Died.	Killed.	Sold.	Total Foxes on hand.	Beaver.	Coyote.	Fisher.	Lynx.	Marten.	Mink.	Muskrat.	Otter.	Raccoon.	Skunk.	Weasel.
Pioneer Blue Fox Co. (G. J. Beck, Mgr.), Centre Island							30	50				80										
Beck, G. J., Centre Island							20	40	1	1		58						6				
Baurle, G. A.; Green, P., Chief Lake P.O.																		40	100			
*Evans, Albert, Armstrong																						
Shuswap Silver Fox Co. (J. W. Hutton, Mgr.), Anstey Farm, via Sicamous																						
Lake View Fox Farm (W. A. Crompton, Mgr.), Quilchena					70	71						141						4				
Miller, Isaac, Lower Nicola					64	70			5		24	105										
Gow, J. S., Rossland																1						
Okanagan Silver Fox Farm (F. E. C. Haines and R. W. Ford), Ewing's Landing, Okanagan Lake					11	14			3			22										
Mountain View Fox Farm (A. E. Axten, Mgr.), Lower Nicola					34	5			1	11	2	25										
Greenaway, Jas.; Bogattin, A., 107 Victoria Rd. Nanaimo					8	4						12					4	35			4	
De Ley, G. H., Louis Creek															2			28				
Landry, O. T., Bella Coola					2							2										
Dunbar, Dr. D. A.; Champion, Dr. B. H. 510 Hastings St., W., Vancouver					9	1					10											
Simmons, Arthur, No. 2 Rd., Lulu Island																		26				
Virostko, M., Extension					7	4			3			8										
Boggs, Mrs. L. M., 620 Broughton St., Victoria			4		11					8		7										
Tual, Julian, Fort Fraser													10						200			
Ellison, Mrs. H. K., Lower Nicola					20	1						21										
De Boer, Peter, Terrace																						
Clark, W.; Jones, W. J., Forestdale			6	4								10										
North Western Silver Fox Co., Rossland					6							6										
Hughes, W., Royal Oak, V.I.		1	1		12	11				3		22									1	
Guss, Joe, Ootsa Lake	1		3									4										
Cranbrook Silver Black Fox Co., Cranbrook					59	79			13			125										
*Bowser, B. F., Prince George																						
Mytting, Sam; Evans, B. J., Prince George																						

Goodall, E., Fraser Lake					2						1	1					2	16						
*Widinger, John, Burton																								
Barker, J. L.; Macrea, L., Streatham					49	34			10			73						25						
Marshall, Jos., Lower Nicola					2							2												
Hunt, F. E., R.R. 1, Coghlan																		5				5		
Collett, C. D.; Gillis, J. J., Merritt					170	66						236												
Dyer, G. M., South Fort George													16						200					
Hale, Wm.; Patterson, Lewis, Lac la Hache																		2						
*Anderson, Axel, Fawn																								
Mallory, E., Sardis	1						1					2					5	8	50		6			
*Kennedy, A., Terrace																								
Eddings, G. S., Ootsa Lake																		7						
Lineham, Percy, Green Lake, via Alta Lake																		92						
Green Bay Fur Farm, c/o J. A. Hird, 1395 64th W., Vancouver																								
Thwaytes, Capt. T., Barriere																			4					
Clarke, C. E., Westbank																	4							
Canadian Blue Fox Farms, Ltd., 301-302 Rogers Building, Vancouver							51	208	47		68	144			2		6							
*Whittington, W. W., Read Island																								
Smith, T. J., Arras P.O., via Pouce Coupe																								
Worthington, H., Engen																		12						
Oliver, T. H., Ladner																			19					
Melsted, V. J., Salmon Arm					14	6			3			17												
Dahl, A. C., Fort Fraser	4								2			2	8						100					
Knight, Mrs. William, Paradise Point, Canoe					8	6			1	1		12												
Godbout, A. L., Albas															1	2								
Piper, E., Kilkerran P.O.	1		3		1					1		4												
Reid, O. J., Chilco			1									1						5						
Stephenson, Mrs. R. M., Sandwick					32	26			10			48												
Dennys, A. Alex., Salmon Arm																			4					
*Sutherland, Wesley, Dawson Creek																								
*Stanyer, J. R., Francois Lake																								
*Munger, Frank, Barrett Lake																								
Wilcox, L. E., Prince George																			100					
Tereshuk, L., Prince George			3		3							6			5		3							
Guss, J. M. and H. C., Ootsa Lake	1		3									4						12						
Kerr, Frank, Rosedale																								
Ellison, W. R., Ootsa Lake																		2						
*Campbell, Lewis; Hosli, E. W., Bestwick																								
Ness, Andrew, Prince Rupert							51	106		6		151												
*Watt, C. A., Wilmer																								
Ogden, Isaac, Lac la Hache																								
McKenzie, I. D., Maple Bay, Duncan					8	8						16												

* No animals on hand.

FUR-FARM RETURNS, 1926—*Continued.*

Name and Address.	Foxes.											Total Foxes on hand.	Other Fur-bearing Animals.									
	Red.		Cross.		Silver.		Blue.		Died.	Killed.	Sold.		Beaver.	Coyote.	Fisher.	Lynx.	Marten.	Mink.	Muskrat.	Otter.	Raccoon.	Skunk.	Weasel.
	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.															
Nichol, Chas., Vanderhoof	....	....	3	....	.....	.....	.....	.....	.....	....	.....	3	1	....	....	....	....	1	.....	....	....	....	....
Garvin, C. A. and W. R., Prince George	....	....	....	2	6	2	.....	.....	1	....	.....	9	....	....	....	....	....	.....	.....	....	....	....	....
Van De Car., Mrs. M., Ootsa Lake	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	28	.....	....	....	....	....
Hanson, A., 740 Cowper St., Victoria	....	....	5	5	3	3	.....	.....	2	....	.....	14	....	....	....	....	....	.....	.....	....	....	....	....
Silvey, Mrs. J. and Mr. D., Box 12, Kuper Island	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	25	.....	....	20	....	....
Fern Creek Ranching Co., Ltd., 413 Granville St., Vancouver	....	....	....	....	4	.....	.....	.....	.....	....	.....	4	....	....	....	....	....	.....	.....	....	.....	....	....
Wilson, W. A., Parksville	2	....	....	....	.....	.....	1	.....	.....	....	.....	3	....	....	....	....	....	.....	.....	....	2	....	....
Gibson, A. E., Milner	....	....	....	....	5	4	.....	.....	1	....	.....	8	....	....	....	....	....	.....	.....	....	.....	....	....
Carnall, G. E., Whonnock	....	....	....	....	.....	.....	9	.....	2	....	.....	7	....	....	....	....	....	.....	.....	....	.....	....	....
*Bartholomew, E. A., Cortes Island	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	.....	....	....
Welch, Mrs. H., Smithers	....	....	....	....	.....	.....	4	.....	.....	....	.....	4	....	....	....	....	....	.....	.....	....	.....	....	....
Cooper, E. T., Cranbrook	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	.....	....	....
West, E. P., cor. Cliff and Halifax Sts., Burnaby	....	....	....	....	.....	.....	4	.....	.....	....	.....	4	....	....	....	....	....	3	.....	....	.....	....	....
Thompson, D. H., 1301 E. Marine Drive, South Vancouver	....	....	....	....	.....	.....	12	.....	.....	....	.....	12	....	....	....	....	....	.....	.....	....	.....	....	....
Davidson, L. H., Vanderhoof	....	....	5	....	1	.....	.....	.....	2	....	.....	4	....	....	....	....	....	.....	.....	....	.....	....	....
Quinn, John, Lochdale P.O., Burnaby	....	....	....	....	.....	.....	4	.....	.....	....	.....	4	....	....	....	....	....	.....	.....	....	.....	....	....
Griffin, N. J., Vanderhoof	....	....	....	....	8	8	.....	.....	.....	....	.....	16	....	....	....	....	....	.....	.....	....	.....	....	....
Hayes, R.; Chisholm, A., Houston	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	.....	....	....
Smith, F. K., Creston	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	25	....	....
Haskins, C. H., Box 481, Kelowna	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	300	....	.....	....	....
Richards, J. C., 19 Lewis St., Victoria	....	....	....	....	16	7	.....	.....	.....	....	2	21	....	....	....	....	....	.....	.....	....	.....	....	....
Salter, W. L. (Mount Tolmie Fox Farm), L.C. 36, Victoria	....	....	....	....	6	3	.....	.....	2	....	.....	7	....	....	....	....	....	.....	.....	....	.....	....	....
Hilborn, J. L., & Sons, 1618 Bank St., Victoria	....	....	....	....	12	8	.....	.....	6	....	.....	14	....	....	....	....	....	.....	.....	....	.....	....	....
Scholey, Mrs. F. H., Royal Oak, V.I.	....	1	10	3	.....	.....	.....	.....	2	....	.....	12	....	....	....	....	....	.....	.....	....	.....	....	....
Brown, F. Clement, 356 4th E., North Vancouver	....	....	....	....	2	3	.....	.....	3	....	.....	2	....	....	....	....	....	.....	.....	....	.....	....	....
Ekstrom, August, Magna Bay	....	....	....	....	6	4	.....	.....	.....	....	.....	10	....	....	....	....	....	.....	.....	....	.....	....	....
Toop, C. S., R.R. 1, Sardis	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	9	7	....	.....	....	....
Bowell, G. T.; Cameron, H. E., New Westminster	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	10	....	.....	....	....
Vidal, A. E., Yellow Point	....	....	....	....	.....	.....	3	8	2	....	.....	9	....	....	....	....	....	.....	.....	....	.....	....	....
Murray, Jos., Vanderhoof	....	....	2	1	.....	.....	.....	.....	.....	....	.....	3	....	....	....	....	....	.....	.....	....	.....	....	....
Walker, Lady E., "Ragley," East Sooke, V.I.	....	....	....	....	.....	.....	.....	4	.....	....	.....	4	....	....	....	....	....	.....	.....	....	.....	....	....

*Bull, H. J., Granite Bay, Valdes Island																								
Alexander, K. C., Hope Point, Gambier Island																		10	8					
King, Philip, Forest Grove																			18					
*McKinley, Thos., Streatham																								
*Serl, Ira A., R.R. 2, Abbotsford																								
Ferguson, R. C., Keefers																			5					
Curran, F. J., Jr., Fanny Bay																		3						
*Vickers, S., Willowford																								
Corbin Silver Black Fox Co., Corbin					4	4						8												
Gibson, H. B., Rolla													4											
Forbes, F. Gilbert, 122-Mile House, Lac la Hache																			12					
Low, Ruth; Chisholm, Alec., Quick													2											
Bedore, Lem, Rose Lake																			25					
Schultz, W. F., Vanderhoof					5							5												
Scott, Thos., Alexandria																			150					
Collison, F. C., Pouce Coupe	4											4												
Anderson, C. S., Burns Lake	2											2					7	11						
Widen, E. P., Houston																	2							
Fetterly, J. H.; Loper, G., Finmoore	1		4		2							7												
Beaver Brook Ranch Co., Kamloops													23											
Barber, W. T., Rutland					6	2			2			6												
Fraser, A., Pemberton Meadows																	2							
Smith, Geo., Agerton																			4					
Akerman, Mrs. E. M., Fulford Harbour																		12			7			
Campbell, A. M., Williams Lake					4		4					8												
*Schaer, Oscar, Beasley P.O., Taghum																								
Shelford, J. L.; Plumb, H., Wistaria																		2						
Fisher, Jos., Baynes Lake																			24					
Maiden, Harold, P.O. Box 717, New Westminster																			2					
*Tunnah, W. R., Masset																								
*Bave, G. H., Vanderhoof																								
Nicholas, Anthony, Clayburn																		10						
Reeves, J. Edgar, 3492 26th E., Vancouver																		1						
*Morean, R. J., Coquitlam																								
Burquitlam Fur Farm, Ltd., Burquitlam							12					12												
Van De Car, A. B., Colquitz																					2			
McLeod, W. R., Thurlow																	6	1						
McDougall, Archie, Lac la Hache							2					2						1						
Conner, E. E., 1242 10th W., Vancouver																			17					
Jackson, C. F., Salmon Arm							4					4												
Hambrook, B. W. and Tom, Hardy Island																		2						
*Salmon River Land Co., Falkland																								
Kitson, Jonathan, Sandspit					2	5						7												
*Welch, Geo.; Cachmour, W. E., Lower Nicola																								

* No animals on hand.

FUR-FARM RETURNS, 1926—*Continued.*

Name and Address.	Foxes.											Total Foxes on hand.	Other Fur-bearing Animals.									
	Red.		Cross.		Silver.		Blue.		Died.	Killed.	Sold.		Beaver.	Coyote.	Fisher.	Lynx.	Marten.	Mink.	Muskrat.	Otter.	Raccoon.	Skunk.	Weasel.
	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.	Over 1 Yr. old.	Under 1 Yr. old.															
Ladoucer, E., Forest Grove	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	2	....	....	.....	.....	....	....	....	....
*Calhoun, C. W.; Lowden, V. H., Revelstoke	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
*Goddard, G. E., Sea Point, Sidney	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	.....	....	....	....	....
Davis, Herbert, Tranquille	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	30	....	....	....	....	.....	10	....	....	....	....
Holmes, H. C., Austin Rd., Burquitlam	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	2	.....	.....	....	....	....	....
Lust, A., Forest Grove	....	....	....	....	.....	.....	.....	.....	.....	....	.....	.....	....	....	....	....	....	.....	200	....	....	....	....
Totals	25	7	84	26	1,306	804	477	567	241	62	189	2,804	108	....	16	3	82	552	3,040	....	76	8	....

* No animals on hand.

LIST OF GAME CONSTABLES, BRITISH COLUMBIA PROVINCIAL POLICE.

Headquarters.

Attorney-General (Minister)	A. M. Manson, K.C.	Victoria.
Provincial Game Warden	Lieut.-Col. J. H. McMullin	,,
Chief Game Inspector	M. Furber	,,
Staff-Sergt. Game Warden	F. R. Butler	,,
Stenographer	Miss A. McGregor	,,
Game Warden	T. H. M. Conly	,,
,,	W. H. Vickers	,,

"A" Division (Vancouver Island District).

Inspector	T. W. S. Parsons	Victoria.
Staff-Sergt. Game Warden	F. R. Butler	,,
Game Warden	R. Gidley	,,
,,	H. Bishop	Sidney.
,,	D. C. Campbell	Duncan.
,,	G. B. Simpson	Lower Cowichan.
,,	H. C. Pyke	Nanaimo.
,,	W. V. Fenton	Courtenay.
,,	A. Monks	Alberni.

"B" Division (Kootenay and Boundary Districts).

Inspector	W. R. Dunwoody	Nelson.
Corporal-Game Warden	(Appointment to be made)	,,
Game Warden	R. M. Robertson	Penticton.
,,	G. Thomas	Cranbrook.
,,	I. J. Brown	Elk Prairie.
,,	G. H. Soles	Athalmer.
,,	M. G. Rutherford	,,
,,	W. J. McKay	,,
,,	D. Greenwood	Canal Flats.
,,	F. H. Butwell	Golden.
,,	G. H. McDermott	,,
,,	C. W. A. Smythe	Revelstoke.

"C" Division (Kamloops, Yale, Okanagan, Cariboo, and Chilcotin Districts).

Inspector	W. L. Fernie	Kamloops.
Corporal-Game Warden	R. D. Sulivan	,,
Game Warden	W. R. Maxson	Kelowna.
,,	J. A. Quesnel	Lumby.
,,	G. D. McKenzie	Clinton.
,,	Ian McRae	Hanceville.
,,	H. P. Hughes	Likely.
,,	G. F. Turner	Barkerville.
,,	F. Kibbee	,,

"D" Division (Atlin, Skeena, Omineca, Fort George, Peace River, and Yukon Boundary Districts).

Inspector	W. Spiller	Prince Rupert.
Sergeant-Game warden	T. Van Dyk	,,
Game Warden	O. L. Hall	Smithers.
,,	E. Forfar	Fort St. James.
,,	C. Muirhead	Prince George.
,,	C. Stephens (Atlin)	Prince Rupert.
,,	J. Hayes (Atlin)	,,
,,	I. Gunnell	Fort Nelson.

"D" Division (Atlin, Skeena, Omineca, Fort George, Peace River, and Yukon Boundary Districts)—Continued.

Corporal-Game Warden	C. G. Barber	Fort Nelson.
Game Warden	To be appointed when weather permits	Boundary (Stikine R.).
"	Ditto	Ditto.
"	A. T. Batchelor	Hudson Hope.

"E" Division (Vancouver, Coast, and Lower Fraser Valley Districts).

Staff-Sergeant	S. North	Vancouver.
Corporal-Game Warden	J. G. Cunningham	"
Stenographer	Miss N. Bryce	"
Game Warden	A. P. Cummins	"
"	W. Clark	"
"	J. Moir	North Vancouver.
"	J. Murray	Port Moody.
"	R. M. Stewart	Chilliwack.
"	F. Urquhart	Langley.
"	E. G. Stedham	Pitt Meadows.
"	W. H. Cameron	Ladner.
"	F. Ledoux	Matsqui.
"	G. F. Elliott	Mission.
"	A. J. Collison	Agassiz.
" (Special)	N. McGillivary	Chilliwack.

Predatory-animal Hunters.

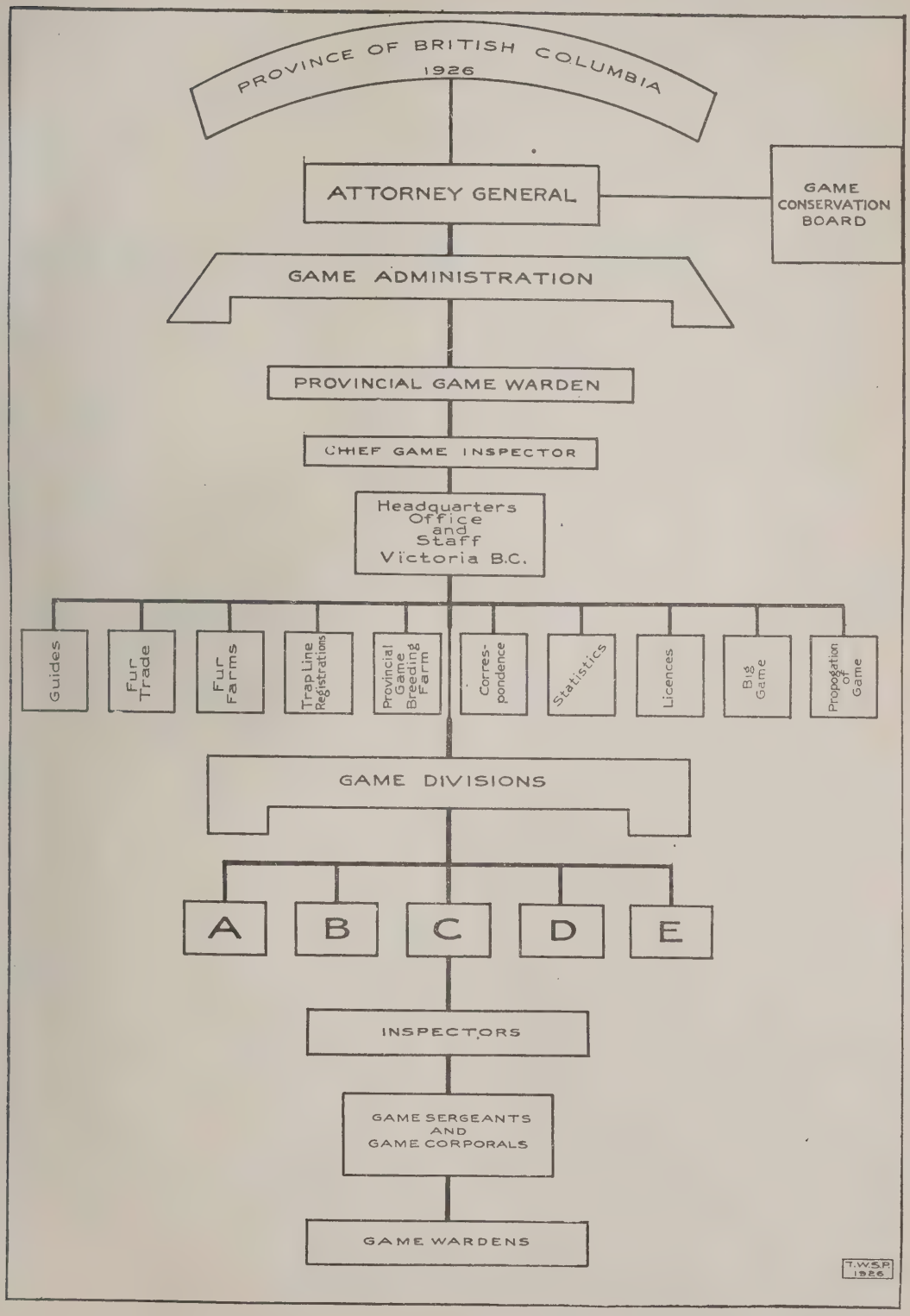
Game Warden	C. Shuttleworth	Penticton.

Elk Lake Game Farm.

Game Warden (in Charge)	J. W. Jones	Victoria.
"	E. Boorman	"
"	S. H. McCall	"
"	S. Townsend	"
"	G. Cuthbert	"

Game Conservation Board (Advisory Body).

Chairman	M. B. Jackson, K.C.	Victoria.
Secretary	F. R. Butler	"
Member	Hon. J. A. Buckham, M.L.A.	Golden.
"	F. H. Kergin, M.L.A.	Alice Arm.
"	Major Allan Brooks	Okanagan Landing.
"	Dr. P. D. MacSween	New Westminster.
"	J. Murray	Vanderhoof.
"	T. B. Booth	Nanaimo.


PROVINCE OF BRITISH COLUMBIA
1926
ATTORNEY GENERAL
GAME CONSERVATION BOARD
GAME ADMINISTRATION
PROVINCIAL GAME WARDEN
CHIEF GAME INSPECTOR
Headquarters Office and Staff Victoria B.C.
Guides
Fur Trade
Fur Farms
Trap Line Registrations
Provincial Game Breeding Farm
Correspondence
Statistics
Licences
Big Game
Propogation of Game
GAME DIVISIONS
A
B
C
D
E
INSPECTORS
GAME SERGEANTS AND GAME CORPORALS
GAME WARDENS
T.W.S.P. 1926

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

825-827-8927

SIXTEENTH ANNUAL REPORT

OF THE

SUPERINTENDENT OF INSURANCE

FOR THE

PROVINCE OF BRITISH COLUMBIA

1927

(BUSINESS TRANSACTED IN 1926)

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

To His Honour ROBERT RANDOLPH BRUCE,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Sixteenth Annual Report of the Superintendent of Insurance for the year ended December 31st, 1926.

A. M. MANSON,

Attorney-General.

Victoria, B.C., June 21st, 1927.

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REPORT OF THE SUPERINTENDENT OF INSURANCE.

DEPARTMENT OF INSURANCE,
VICTORIA, B.C., June 21st, 1927.

The Honourable A. M. Manson,
Attorney-General, Victoria, B.C.

SIR,—I beg to submit my report, the Sixteenth Annual Report of the Department, covering the year ended December 31st, 1926, in accordance with section 217 (1) of the "Insurance Act," chapter 20, 1925.

At the end of the year there were 233 insurers licensed to transact business, fourteen new companies having been licensed, as follows:—

American Equitable Assurance Company of New York.
Automobile Insurance Company of Hartford, Conn.
The China Fire Insurance Company, Limited, Victoria, Hong Kong.
Empire Life Insurance Company, Toronto.
First American Fire Insurance Company, New York.
General Exchange Insurance Corporation, New York.
Indemnity Insurance Company of North America, Philadelphia.
Merchants Casualty Insurance Company, Waterloo, Ontario.
Mutual Fire Insurance Company of British Columbia, Vancouver.
New York Underwriters Insurance Company, New York.
North River Insurance Company, New York.
Standard Life Assurance Company, Edinburgh, Scotland.
State Assurance Company, Limited, England.

The American Equitable Assurance Company of New York was formerly licensed, but merged with the Anchor Insurance Company of New York and was reincorporated and licensed as a new company on February 11th, 1926.

The Merchants Casualty Insurance Company was incorporated by the Dominion of Canada and took over the business of the Merchants Casualty Company of Manitoba on January 1st, 1926.

Mutual Fire Insurance Companies were brought under the "Insurance Act" and therefore the Mutual Fire Insurance Company of British Columbia is now licensed by this Department.

The origin of the various insurers, a complete list licensed as at December 31st, 1926, of which will be found on pages 23–31, is as follows:—

SUMMARY.

Where incorporated.	Dominion Licensees.	Provincial Licensees.	Total.
British Columbia	....	2	2
Canada	57	....	57
Other Provinces	8	6	14
Great Britain	58	3	61
Australia	3	....	3
China	1	....	1
Denmark	1	....	1
France	4	....	4
Hong Kong	3	....	3
Switzerland	2	....	2
United States	85	....	85
Totals	222	11	233

A list of the underwriters' agencies, twenty in number, licensed in this Province will also be found on page 32.

Eleven reciprocal exchanges obtained permits under section 174 of the Act, and a list of them will be found on page 30.

Two fraternal societies—namely, Canadian Order of Chosen Friends and The Odd Fellows Relief Association of Canada—were duly licensed.

There were only three insurers which ceased business in the Province during the year, and they were as follows:—

Canton Insurance Office, Limited, Victoria, Hong Kong.
Lumbermen's Indemnity Exchange, Seattle, Wash.
The Sterling Fire Insurance Company of Indiana, Indianapolis.

In pursuance of the requirements of the Act, lists of licensed agents were published in the British Columbia Gazette and distributed, showing that there were 1,379 life insurance agents, 1,605 fire and miscellaneous insurance agents, and 20 adjusters carrying on business in the Province during 1926.

Statement of fire insurance premiums, losses incurred, and losses paid for 1926, with a summary for the past five years, will be found on pages 33–35.

Tables showing life, automobile, and miscellaneous insurance business transacted during the year will also be found on pages 37–40.

In September last the Superintendents of Insurance for the Provinces of Canada held their annual conference in Victoria, and the following were present: For Ontario, R. Leighton Foster, Superintendent; Manitoba, Charles E. Heath, Superintendent; Saskatchewan, Arthur E. Fisher, Superintendent; Alberta, Henry Brace, Deputy Superintendent; and British Columbia, J. P. Dougherty, Superintendent. In addition, R. W. Shannon, K.C., Legislative Counsel for Saskatchewan, and H. G. Garrett, Deputy Superintendent of Insurance for British Columbia, assisted in a legal and advisory capacity.

The next conference is to be held in the City of Quebec in September, when quite a number of unfinished matters will be dealt with and finally disposed of. One question of some importance which will be brought up will be that of a Uniform Agents' Licensing Act, and I have no doubt the result will be a vast improvement over some of the Acts that are now in force.

As you are aware, section 186 (1) of the "Insurance Act" was amended providing that no restriction should be placed upon agents in municipalities under 3,000 population as to the number of policies to be written by them.

A new section was inserted in the Act permitting life insurance companies to pay retired agents or their dependents renewal commissions without the necessity of the agents obtaining a licence.

"Real-estate Agents' Licensing Act."

The above Act was amended at the last session of the Legislature, requiring all real-estate agents and salesmen in municipalities of a population of over 10,000 to furnish a bond in the sum of $1,000. In accordance with the requirements of the Act a list of the licensed agents and salesmen was published in the British Columbia Gazette and duly distributed, showing that there were 1,164 agents and salesmen licensed for the period July 1st, 1926, to June 30th, 1927.

I have the honour to be,
Sir,
Your obedient servant,

J. P. DOUGHERTY,
Superintendent of Insurance.

APPENDIX.

Annual Statements of Provincial Licensees for the Year ended December 31st, 1926.

BRITISH COLUMBIA PLATE GLASS INSURANCE COMPANY.

Head Office—Vancouver, B.C.

Directors.

Walter E. Graveley. W. J. Albutt.
F. M. Chaldecott. H. W. Chamberlain.
A. F. Beasley.

Alfred Farmer, Secretary.

Amount deposited with the Government of British Columbia: Inscribed stock, £200; Township of Richmond bonds, $5,000; Dominion of Canada War Loan bonds, $1,000; total (par), $6,220.17.

Authorized capital	$25,000
Amount subscribed	9,600
Amount paid up in cash	9,600

STATEMENT FOR THE YEAR ENDED DECEMBER 31ST, 1926.

Assets.

Book value of bonds, debentures, and debenture stock owned by the Company	$62,423 63
Cash in banks	1,733 15
Interest accrued	928 07
Agents' balances and premiums uncollected (net commissions deducted: Written on or after October 1st, 1926, $6,946.40; written prior to October 1st, 1926, $2,947.12)	9,893 52
Agents' commissions paid in advance	11,123 50
Gross assets of the Company	$86,101 87
Deduct assets not admitted: Agents' balances on premiums written prior to October 1st, 1926	2,947 12
Total admitted assets	$83,154 75

Liabilities.

Total net reserve, $31,352.86; carried out at 80 per cent. thereof	$25,082 28
Taxes due and accrued	2,000 00
Total of all liabilities except capital stock	$27,082 28
Capital stock paid in cash	$ 9,600 00
Rest account	27,500 00
Surplus in Profit and Loss Account	8,753 76
Excess of assets over liabilities	$45,853 76

Profit and Loss Account.

Net premiums written		$27,025 19
Reserve of unearned premiums (80 per cent.)—		
At beginning of year	$25,200 00	
At end of year	25,082 28	
Decrease		$ 117 72
Net premiums earned		$27,142 91
Net claims incurred		$ 9,350 28
Net adjustment expenses, commission, taxes, salaries, fees, and travelling expenses		11,965 70
Underwriting profit		$ 5,826 28
Other revenue, interest dividends and rents earned		2,927 48
Net profit for the year		$ 8,753 76
Surplus of assets over liabilities (excluding capital stock) at beginning of year		$43,262 33
Net profit brought down		8,753 76
		$52,016 09
Increase in paid-in capital stock		1,920 00
		$53,936 09
Increase in disallowed assets	$2,947 12	
Dividends declared	4,800 00	
		7,747 12
Surplus of assets over liabilities (excluding capital stock at end of year)		$46,188 97

List of Shareholders.

Name.	Residence.	Amount subscribed.	Amount paid.
Albutt, W. J.	Vancouver	$2,800 00	$2,800 00
Albutt, Mrs. E. A.	,,	3,000 00	3,000 00
Akroyd, H. C.	,,	100 00	100 00
Barnsley, Rev. Ego	Yorkshire, England	100 00	100 00
Beasley, A. F.	Victoria	700 00	700 00
Bell-Irving, H.	Vancouver	500 00	500 00
Blythe, Miss F. I.	Woodside, Vancouver Island	200 00	200 00
Chaldecott, F. M.	Vancouver	500 00	500 00
Chamberlain, H. W.	,,	500 00	500 00
Charleson, Edith H.	,,	100 00	100 00
Creery, A. McC.	,,	100 00	100 00
Graveley, W. E.	,,	500 00	500 00
Hope, C. E.	,,	200 00	200 00
Martin, Robert	,,	100 00	100 00
Rogers, Jonathan	,,	200 00	200 00
		$9,600 00	$9,600 00

HOME ASSURANCE COMPANY OF CANADA.

Head Office—Calgary, Alberta.

Directors.

G. R. Eltherington.
J. G. Norstrant.
G. Fisher.
A. Corrie.
E. Roberts.

Clarence H. St. John, Secretary.

Amount deposited with the Government of British Columbia: Grand Trunk Pacific Railway 3-per-cent. first mortgage bonds, £1,300; Canadian National Railway 5-per-cent. bonds, $15,500; and Canadian National Railway 4½-per-cent. bond, $1,000.

Authorized capital	$500,000 00
Amount subscribed	500,000 00
Amount paid in cash	59,029 50

STATEMENT FOR THE YEAR ENDED DECEMBER 31ST, 1926.

Assets.

Cash value of mortgages, exclusive of interest	$ 3,900 00
Cash value (excluding interest and dividends) of stock, shares, bonds, etc.	61,271 83
Actual cash on hand at Head Office	385 55
Cash on deposit to the Company's credit and not drawn against on December 31st, 1926	3,231 80
Agents' balances, advances against commissions to be earned	1,978 52
Interest due or accrued	1,256 78
Calls on capital stock outstanding in course of collection	3,470 50
Amount of all other assets	3,618 00
Office furniture (other than permanent fixtures), safe, etc.	1,820 90
Total assets	$80,933 88

Liabilities.

Claims or losses in suspense, or supposed, or reported	$ 705 21
Reserve of unearned premiums	7,641 51
Total amount of liabilities	$ 8,346 72
Capital stock paid up	62,500 00
Total of liabilities and paid-up capital	$70,846 72
Excess of assets over such total	$10,087 16

Income.

Net cash received during the year for premiums	$45,502 25
Cash received for interest	2,592 34
Cash received for calls on capital stock	7,975 00
Cash from all other sources	9,449 50
Cash received for debentures, mortgages, and other securities (not extended), $2,057.95.	
Total income	$65,519 09

Expenditure.

Cash paid to agents for commission, salaries, etc.	$13,397 88
„ for law costs	75 00
„ „ office expense, caretaking, and light	1,761 99
„ „ interest, discount, and exchange	80 55
„ „ statutory assessment and licence fees	250 00
„ „ travelling expenses	705 50
„ „ rent and taxes	980 00
„ „ salaries, directors' and auditors' fees	8,552 50
„ „ printing, stationery, and advertising	1,311 93
„ „ postage, telegrams, and express	743 01
Total expenses of management	$27,855 36
Amount paid for losses occurring during the year	11,943 68
Cash paid for other expenditure	6,733 12
Cash paid for debentures, mortgages, etc. (not extended), $23,448.01.	
Total expenditure	$46,537 16

RETURNS FOR BRITISH COLUMBIA.

Assets	$ 2,000 00
Liabilities	236 66
Premiums received	19,574 28
Losses incurred, net	6,245 92
Losses paid, net	6,009 26
Amount at risk	263,850 00

MUTUAL FIRE INSURANCE COMPANY OF BRITISH COLUMBIA.

Head Office—Vancouver, B.C.

Directors.

Jas. Bailey.
Jno. W. Berry.
Archibald Blair.
Henry Bose.
W. J. Frederick.
W. H. Higginson.
R. U. Hurford.
Thos. Laing.
J. W. Miller.
D. A. McKee.
H. F. Page.
W. J. Park.
C. E. Whitney-Griffiths.

Manager-Secretary, Wm. Townsley.

STATEMENT FOR THE YEAR ENDED DECEMBER 31ST, 1926.

Assets.

Balance in bank		$ 9,058 79
Investments—		
Dominion of Canada war bonds	$2,000 00	
Government guaranteed bonds, C.N.R.	6,089 57	
First mortgage	300 00	
Real estate	3,340 00	
		11,729 57
Balance 1924 assessment unpaid		1,322 08
Insurance premiums due and unpaid		2,480 47
		$ 24,590 91
Insurance premiums, second and third instalments		53,293 36
Office furniture		684 64

Printing and stationery, stock on hand		$ 100 00
Premium notes held by Company		190,227 78
Deferred Commission Account		13,359 87
Deposits		5 00
		$282,261 56

Liabilities.

Loans		$ 9,650 00
Fire losses in course of adjustment, estimated		800 00
Reserve Account—		
Agents' commissions earned	$ 745 82	
Reinsurance reserve for outstanding risk	18,956 65	
Insurance premiums reserve	53,293 36	
Premium notes reserve	190,227 78	
1924 assessments unpaid	1,322 08	
		264,545 69
Surplus Account—		
Profit and Loss Account as at January 1st, 1926	$ 4,420 24	
Excess of income over operating expenses for the year ended December 31st, 1926	24,680 13	
1924 assessments collected during 1926	671 49	
	$20,931 38	
Fire losses paid and reserved for	13,665 51	
		7,265 87
		$282,261 56

Profit and Loss Account.

By Insurance premiums	$47,097 24	
Interest Account	385 01	
		$47,482 25
To Stationery and printing	$ 874 00	
Rent and light	1,348 26	
Telephone	173 62	
Stamps	309 40	
Travelling expenses	305 96	
Fire adjustment expenses	59 05	
General expenses	206 41	
Advertising	825 69	
Taxes on real estate	154 20	
Commissions	7,752 29	
Salary, Manager, Secretary	3,600 00	
Salary, general	4,266 75	
Legal expenses	216 00	
Grants to officials	450 00	
Interest on loans	859 00	
Reinsurance premiums	178 90	
Minister of Finance, special war revenue taxes	1,222 59	
		22,802 12
Balance		$24,680 13

THE ONTARIO EQUITABLE LIFE AND ACCIDENT INSURANCE COMPANY.

Head Office—Waterloo, Ontario.

Directors.

S. C. Tweed.	Hon. F. C. Biggs.
Sen. H. W. Laird.	A. E. Silverwood.
J. C. Breithaupt.	A. W. Briggs.
Edwin Irwin.	W. E. Payne.
E. C. Mitchell.	E. K. Reiner.
J. A. Martin.	Dr. C. S. Morton.
W. E. Long.	Melville Rousseau.
Hon. M. Doherty.	H. G. Bertram.
J. M. Riddell.	R. Locke.

M. J. Smith, Secretary.

Amount deposited with the Government of British Columbia: District of Burnaby 5-per-cent. bonds, $10,000; Canadian Northern Railway 4½-per-cent. stock, $17,250; Canadian North Western Railway 4½-per-cent. stock, $5,937.33; total, $33,187.33.

Authorized capital	$3,750,000
Amount subscribed	3,310,000
Amount paid up	331,000

STATEMENT FOR THE YEAR ENDED DECEMBER 31ST, 1926.

Assets.

Ledger assets—		
Book value of real estate held by the Company		$ 114,424 44
Mortgage loans on real estate		1,498,341 04
Amount secured by the Company's policies in force, the reserve on each policy being in excess of all indebtedness—		
(*a*.) Loans to policyholders	$237,324 20	
(*b*.) Advances to policyholders under automatic non-forfeiture	76,366 12	
		313,690 32
Book value of bonds, debentures, and debenture stocks owned by the Company		1,598,398 50
Cash: (*a*) At Head Office, $69,084.37; (*b*) in banks, $6,716.07		75,800 44
All other ledger assets		6,725 17
Total ledger assets		$3,607,379 91
Non-ledger assets—		
Interest and dividends due, $1,179.26; interest accrued, $44,055.73		$ 45,234 99
Net premiums due and uncollected and deferred		128,891 87
Market value of bonds over book		40,809 05
Total non-ledger assets		$ 214,935 91
Total assets		$3,822,315 82

Liabilities.

Net liability under assurance, annuity, and supplementary contracts in force for payments not due, dependent on life, disability, or any other contingency or on a term certain	$2,422,896 00
Net liability for payments due under contracts	8,047 00
Provision for unreported death losses and disability claims	13,000 00
Received from policyholders in advance, premiums	4,414 52
Provincial, municipal, and other taxes due and accrued	3,785 00
Medical examiners' fees due and accrued	1,215 00
Commission to agents due and accrued	1,265 61
Borrowed money	785,759 29

Reserve for unpaid accounts	$	2,000 00
Staff Savings Fund		850 31
Balance due on bonds purchased		1,924 83
Total liabilities (except capital stock)		$3,245,157 56

Income.

Total net premiums income and consideration for annuities	$	884,903 74
Interest and dividends		123,696 47
Gross rents for Company's property (including $5,040 for Company's occupancy of its own buildings), less $4,056.18 for taxes, expenses, and repairs in connection with such properties		3,579 55
Income from premium on stock (sold in 1926)		16,200 00
Income from premium on stock (sold prior to 1926 but paid in 1926)		22,369 42
Gross profit on sale or maturity of ledger assets: Commission on mortgages, $34,202.32; bonds, $7,017.22		41,219 54
Total income		$1,091,968 72

Disbursements.

Total net disbursements in respect of assurance and annuity contracts	$	155,123 35
Interest or dividends to shareholders		6,000 00
Taxes, licences, and fees (including taxes on investments but excluding taxes on real estate)		19,437 61
Head Office expenses: Salaries, $47,505.13; directors' fees, $1,990; auditors' fees, $1,400; travelling expenses, $5,023.78; rents, $6,817.09		62,736 00
Branch office and agency expenses: Assurance commissions, first year, $105,023.76; renewal, $71,381.29; salaries, $14,621.36; travelling expenses, $631.55; rents, $13,631.85; miscellaneous, $365.64		205,655 45
All other expenses		44,794 49
Total disbursements	$	493,746 90

RETURNS FOR BRITISH COLUMBIA.

Deposit with Government	$	33,187 33
Assets		309,454 97
Liabilities		60,531 00
Premiums received		22,693 71
Losses incurred, net		8,200 48
Losses paid, net		8,200 48
Amount at risk		825,785 00

ROYAL PLATE GLASS INSURANCE COMPANY OF CANADA.

Head Office—Vancouver, B.C.

Directors.

J. P. Nicolls. C. A. Wickens.
C. H. Macaulay. R. H. Maitland.
A. P. Bogardus. B. C. Grant.

Edgar S. Smith, Secretary.

Amount deposited with the Government of British Columbia: C.N.O. Railway Company 3½-per-cent. stock, £1,320; deposit receipt, Canadian Bank of Commerce, $325; total, $5,335.72.

Authorized capital	$25,000
Amount subscribed	10,000
Amount paid up in cash	2,750

STATEMENT FOR THE YEAR ENDED DECEMBER 31ST, 1926.

Assets.

Mortgage loans on real estate		$15,400 00
Amount of loans secured by bonds, stocks, or other marketable collaterals		1,000 00
Cash in banks		1,128 05
Interest and dividends due		370 38
Agents' balances and premiums uncollected (net commission deducted)		715 52
Government deposit		5,335 72
Commission on premiums paid in advance		1,406 97
Total admitted assets		$25,356 64

Liabilities.

Total net reserve, $4,019.94; carried out at 80 per cent. thereof		$ 3,457 60
All other liabilities		300 28
Total of liabilities except capital stock		$ 3,757 88
Capital stock paid up		$ 2,750 00
Surplus in Profit and Loss Account		18,286 42
Excess of assets over liabilities		$21,036 42
Total liabilities		$24,794 30

Profit and Loss Account.

Net premiums written		$ 4,322 22
Reserve of unearned premiums (80 per cent.)—		
At beginning of year	$4,267 51	
At end of year	4,019 94	
Increase		247 57
Net premiums earned		$ 4,569 79
Net claims incurred	$1,728 61	
Commissions	1,668 87	
Taxes	177 54	
Salaries, fees, and travelling expenses	165 00	
All other expenses	60 37	
		3,800 39
Underwriting profit		$ 769 40
Interest, dividends, and rents earned		1,399 98
Net profit for the year		$ 2,169 38

Surplus for Protection of Policyholders.

Surplus of assets over liabilities (excluding capital stock) at beginning of year	$16,117 04
Net profit brought down	2,169 38
Surplus of assets over liabilities (excluding capital stock) at end of year	$18,286 42

LIST OF SHAREHOLDERS.

Name.	Residence.	No. of Shares.	Amount subscribed.	Amount paid.
C. A. Wickens	Vancouver	8	$ 800	$ 220 00
J. P. Nicolls	„	5	500	137 50
I. Douglas	Boston, U.S.A.	12	1,200	330 00
Mary Douglas	„ „	5	500	137 50
R. D. Douglas	Binghampton, U.S.A.	5	500	137 50
N. S. Douglas	„ „	5	500	137 50
A. P. Bogardus	Vancouver	10	1,000	275 00
J. P. Nicolls	„	14	1,400	385 00
C. H. Macaulay	„	14	1,400	385 00
R. M. Maitland	„	12	1,200	330 00
B. C. Grant	„	10	1,000	275 00
		100	$10,000	$2,750 00

THE TORONTO CASUALTY FIRE & MARINE INSURANCE COMPANY.

Head Office—Toronto, Ont.

Directors.

C. H. Ackerman.
J. T. Brannd.
A. E. Dawson.
W. W. Evans.
Forbes Godfrey.
Henry Knight.
J. O. Lintean.
M. A. Mackenzie.
R. P. Parker.
T. H. Pratt.
G. L. Smith.
A. E. Wilson.

W. B. Coatts, Secretary.

Amount deposited with the Government of British Columbia: Hydro-electric 4-per-cent. bonds, $6,000; Province of Ontario 5-per-cent. bond, $21,000; total, $27,000.

Authorized capital	$1,000,000
Amount subscribed	1,000,000
Amount paid up in cash	269,735

STATEMENT FOR THE YEAR ENDED DECEMBER 31ST, 1926.

Assets.

Mortgage loans on real estate		$ 13,500 00
Book value of bonds, debentures, etc.		379,474 98
Cash at Head Office		3,828 60
Cash in banks		107,936 18
Interest due and accrued		4,720 41
Agents' balances and premiums uncollected (net commissions deducted) written on or after October 1st, 1926, $108,860.17; written prior to October 1st, 1926, $10,650.26		119,510 43
Bills receivable		292 08
Amount due from reinsurance on losses already paid		8,220 94
All other assets—		
Advance to agents	$ 1,600	
Balances due from other companies	11,736 98	
Market value of securities over book value	8,571 31	
		21,908 29
Gross assets of Company		$659,391 91
Deduct assets not admitted, agents' balances on premiums written prior to October 1st, 1926		10,650 26
Total admitted assets		$648,741 65

Liabilities.

Total provision for unpaid claims	$119,466 07
Total net reserve, $351,852.19; carried out at 80 per cent. thereof	281,481 75
Reserve of unpaid losses under unlicensed reinsurance unsecured	8,093 96
Taxes due and accrued	10,185 14
Reinsurance premiums	34,319 93
Reserve for contingent commissions	1,500 00
Cash withheld from unlicensed insurers	12,481 57
Total of all liabilities except capital stock	$467,528 42
Capital stock paid in cash	$269,735 00
Surplus or deficit in Profit and Loss Account	88,521 77
Excess of assets over liabilities	$181,213 23

Profit and Loss Account.

Net premiums written		$818,610 42
Reserve of unearned premiums (80 per cent.)—		
At beginning of year		$270,051 84
At end of year		281,481 75
Increase		$ 11,429 91
Net premiums earned		$807,180 51
Net claims incurred		$516,568 22
Net adjustment expenses		50,352 83
Commissions		197,077 29
Taxes		21,925 28
Salaries, fees, and travelling expenses		82,364 74
All other expenses		44,632 74
Underwriting profit		$105,740 59
Other revenue—		
Interest, dividends, and rents earned	$17,438 94	
Profit on sale of securities	475 00	
		$ 17,913 94
Other expenditure—		
Bad debts written off	$ 8,816 68	
Decrease in market value of investments	2,233 81	
		11,050 49
Net profit for the year		$ 98,877 14

RETURNS FOR BRITISH COLUMBIA.

Deposit with Government	$ 27,000 00
Assets	31,962 67
Liabilities	24,161 96
Premiums received	43,601 56
Losses incurred, net	29,423 14
Losses paid, net	27,360 13
Amount at risk	1,950,282 00

THE WESTERN EMPIRE LIFE ASSURANCE COMPANY.

Head Office—Winnipeg, Manitoba.

Directors.

S. D. Hannah.	Brig.-Gen. Dyer.
Wm. Hudson.	R. W. Craig.
Dr. A. M. Campbell.	Wm. Smith.

Secretary, F. C. O'Brien.

Authorized capital	$1,000,000 00
Amount subscribed	925,000 00
Amount paid in cash	224,164 74

STATEMENT FOR THE YEAR ENDED DECEMBER 31ST, 1926.

Assets.

Ledger assets—		
Book value of real estate held by the Company		$ 15,319 60
Mortgage loans on real estate		523,309 86
Amount secured by the Company's policies in force, the reserve on each policy being in excess of all indebtedness—		
(*a*.) Loans to policyholders	$155,869 63	
(*b*.) Advances to policyholders under automatic non-forfeiture provisions	47,959 14	
		203,828 77
Book value of bonds, debentures, and debenture stocks owned by the Company		247,074 13
Cash: (*a*) At Head Office, $1,651.41; (*b*) in banks, $24,160.39		25,811 80
Total ledger assets		$1,015,344 16
Non-ledger assets—		
Interest and dividends due		$ 16,648 61
Net premiums due and uncollected and deferred		77,062 59
Total non-ledger assets		$ 93,711 20
Total assets		$1,109,055 36

Liabilities.

Net liability under assurance, annuity, and supplementary contracts in force for payments not due, dependent on life, disability, or any other contingency or on a term certain	$ 820,854 00
Net liability for payments due under contracts	6,881 23
Received from policyholders in advance	2,964 15
Medical examiners' fees due and accrued	1,226 08
Borrowed money	41,100 00
Death claims reported	3,500 00
Total liabilities (except capital stock)	$ 876,525 46

Income.

Total net premium income and consideration for annuities	$ 227,313 13
Interest and dividends	64,993 97
Cash from policies cancelled	2,052 31

Investment repayments	$106,737 30	
Policy loan repayments	25,514 27	
Shareholders	3,161 55	
	$135,413 12	
Total income		$ 294,359 41

Disbursements.

Total net disbursements in respect of assurance and annuity contracts	$ 26,852 08
Taxes, licences, and fees	5,033 20
Head Office expenses: Salaries, $28,889; directors' fees, $130; auditors' fees, $306.95; travelling expenses, $1,113.05; rents, $3,970; miscellaneous, $6,595.65	41,004 65
Branch office and agency expenses	54,095 90
All other expenses	12,380 17
Total disbursements	$ 139,366 00

Returns for British Columbia.

Assets, including policy loans	$ 69,996 23
Liabilities	1,000 00
Premiums received	31,582 60
Losses incurred, net	8,000 00
Losses paid, net	7,000 00
Amount at risk	1,018,903 00

Annual Statements of Fraternal Societies for the Year ended December 31st, 1926.

THE GRAND COUNCIL OF THE CANADIAN ORDER OF CHOSEN FRIENDS.

Head Office—Hamilton, Ontario.

Governing Executive Authority.

Wm. Benson.
John L. Archer.
John L. Davidson.
A. W. Richardson.
Albert Chevalier.
Dr. J. W. Edwards.
Alex. Harris.

W. F. Montague, Secretary and Treasurer.

Prof. M. A. Mackenzie, Actuary.

STATEMENT FOR THE YEAR ENDED DECEMBER 31ST, 1926.

Assets by Funds.

	Mortuary Fund.	Sickness and Funeral Fund.	Child Insurance Fund.	Guarantee Fund.	General Expense Fund.	Total.
Ledger items—						
Net ledger assets, December, 1925	$1,198,382 88	$190,197 44	$ 9,108 25	$1,000 00	$33,579 26	$1,432,987 83
Increase in ledger assets in 1926 from income	139,466 31	5,177 70	1,915 77	.....	5,214 26	151,774 04
Net ledger assets, December, 1926	$1,337,849 19	$196,095 14	$11,024 02	$1,000 00	$38,793 52	$1,584,761 87
Non-ledger items—						
Interest due and accrued	$ 42,779 06	$ 7,006 54	$ 246 91	.....	$ 587 14	$ 50,619 65
Premiums, contributions, etc., due	39,729 90	2,120 98	224 77	$ 277 00	3,515 92	45,868 57
Supplies, office furniture	.....	.....	.....	.....	5,319 96	5,319 96
Total non-ledger assets	$ 82,508 96	$ 9,127 52	$ 471 68	$ 277 00	$ 9,423 02	$ 101,808 18
Total ledger and non-ledger assets	$1,420,358 15	$205,222 66	$11,495 70	$1,277 00	$48,216 54	$1,686,570 05
Deduct assets not admitted	50,746 37	2,088 58	.....	.....	.....	52,834 95
Total admitted assets	$1,369,611 78	$203,134 08	$11,495 70	$1,277 00	$48,216 54	$1,633,735 10

Liabilities.

Mortuary Fund—		
Death claims incurred and reported during year but not paid		$ 39,470 40
Death claims incurred during year but not reported until after December 31st		7,250 00
Disability claims incurred during year and not paid		392 80
Premiums paid in advance		703 22
Total liabilities except reserve		$ 47,816 42
Sickness Fund and Funeral Benefits—		
Claims incurred and reported during year but not paid		$ 700 00
Claims incurred during year but not reported until after December 31st		1,800 00
Premiums paid in advance		55 58
Total liabilities except reserve		$ 2,555 58
Guarantee Fund—		
Premiums paid in advance		$ 30 06
Other Benefit Funds—Child Insurance Fund—		
Amount overpaid on monthly rates		$ 0 80
Credit balances due Councils		5 95
		$ 6 75
General Expense Fund—		
Commissions, etc.		$ 585 00
Expense dues paid in advance		413 77
Total general fund liabilities		$ 998 77
Total liabilities (all funds) except reserve		$ 51,407 58

Income.

Mortuary Fund—		
Premiums (with extra dues, etc.)	$434,745 44	
Interest	60,411 00	
(Note.—Only 111 assessments collected in 1926.)		
		$495,156 44
Sickness Fund and Funeral Benefits—		
Premiums	$ 23,209 95	
Interest	10,901 70	
Cancelled cheque	9 40	
		34,121 15
Guarantee Fund—		
Premiums	$ 413 82	
Interest	30 50	
		444 32
Child Insurance Department—		
Premiums	$ 1,498 85	
Per capita tax and certificate fees	264 13	
Interest	416 92	
		2,179 90
General Expense Fund—		
Interest	$ 1,340 94	
Expense dues from members	18,063 75	
Supplies, etc.	1,603 73	
		21,008 42
Total income		$552,910 23

Disbursements.

Mortuary Fund—		
Death claims	$292,731 67	
Disability claims	38,074 92	
Legal expense *re* deaths and debentures	901 02	
Actuary *re* valuation	500 00	
Registration fees, insurance	380 00	
		$332,587 61
Sickness Fund—		
Sickness claims	$ 22,327 70	
Funeral claims	2,900 00	
Other disbursements	833 36	
Legal expense *re* debentures	61 29	
Legal expense of actuary *re* valuation	500 00	
		26,622 35
General Expense Fund—		
Head Office expenses—		
Salaries	$ 6,266 64	
Directors' fees	960 45	
Auditors' fees	700 00	
Travelling expenses	252 25	
Rents	1,220 72	
Printing and supplies	1,044 23	
Miscellaneous	9,167 98	
		19,612 27

Agency and organization expenses—		
Commissions	$ 12,490 37	
Salaries	1,800 00	
Travelling expenses	1,595 09	
Miscellaneous	970 86	
		$ 16,856 32
All other expenses—		
Advertising	$ 535 78	
Books, periodicals, express, telegrams, and telephones	376 29	
Legal fees	31 02	
Taxes and licences	652 63	
Printing and stationery	1,091 15	
Light, fuel, and water	39 05	
Official publications	2,328 42	
Miscellaneous	403 20	
		5,457 54
Total disbursements		$401,136 09

RETURNS FOR BRITISH COLUMBIA.

Income—	
Premiums (with extra dues, etc.) for mortuary benefits	$ 10,392 79
Premiums for sick benefits	912 07
Premiums for Guarantee Fund	10 80
Premiums for other benefits, Child Insurance Dept.	187 24
	$ 11,502 90
Disbursements—	
Claims paid for mortuary benefits	$ 8,900 00
Claims paid for sick benefits	581 95
Claims paid for field-work	692 50
	$ 10,174 45

THE ODD FELLOWS' RELIEF ASSOCIATION OF CANADA.

Head Office—Kingston, Ontario.

Governing Executive Authority.

Dr. J. C. Connell.
Jos. Powley.
W. Mundell.
J. O. Minnes.
H. G. Robertson.
C. C. Folger.
Wm. Jackson.
L. B. Cooper.
W. McDonald.

Secretary, F. H. Rutherford.

STATEMENT FOT THE YEAR ENDED DECEMBER 31ST, 1926.

Assets by Funds.

Mortuary Fund—	
Net ledger assets, December, 1925	$3,534,419 20
Increase in ledger assets, 1926, from income	683,551 58
Decrease in ledger assets, 1926, from disbursements	395,102 50
Net ledger assets, December, 1926	3,822,868 28
Total admitted assets	3,822,868 28
General Expense Fund—	
Increase in ledger assetes, 1926, from income	87,129 95
Decrease in ledger assets, 1926, from disbursements	87,129 95

Liabilities.

Mortuary Fund—		
Death claims incurred and reported during year but not paid		$ 25,935 00
Total liabilities except reserve		$ 25,935 00

Income.

Mortuary Fund—		
Premiums (with extra dues, etc.)	$322,139 24	
Interest and rents	161,412 34	
Total		$ 683,551 58
General Expense Fund—		
Expense dues from members	$ 45,764 86	
Other sources	41,365 09	
Total		87,129 95
Total income		$ 770,681 53

Disbursements.

Mortuary Fund—		
Death claims	$363,876 84	
Disability claims	1,730 00	
Surrender values	28,837 50	
Other disbursements	658 16	
		$ 359,102 50
General Expense Fund—		
Head Office expenses—		
Salaries	$ 15,766 38	
Directors' fees	473 00	
Auditors' fees	1,200 00	
Actuaries' fees and expenses	500 00	
Travelling expenses	906 85	
Rents	992 04	
Printing and supplies	494 05	
Miscellaneous	4,197 68	
		24,530 00
Agency and organization expenses—		
Commissions	$ 2,977 25	
Salaries	10,245 84	
Travelling expenses	5,031 28	
Commission on collection of premiums	33,487 19	
		51,741 56
All other expenses—		
Advertising	$ 617 51	
Telegrams, postage, and telephones	2,364 34	
Medical fees	1,010 00	
Taxes and licences	1,588 06	
Agency printing and stationery	1,358 66	
Light, fuel, and water	686 35	
Miscellaneous	3,233 47	
		10,858 39
Total disbursements		$ 482,232 45

RETURNS FOR BRITISH COLUMBIA.

Income—Premiums (with extra dues, etc.) for mortuary benefits	$ 31,994 42
Disbursements—Claims paid for mortuary benefits	9,230 00

LIST OF INSURERS LICENSED UNDER THE "INSURANCE ACT."

(CORRECTED TO JUNE 21ST, 1927.)

Name of Insurer and Head Office.	Attorney appointed under the Act.	Class of Insurance for which Licensed.
The Acadia Fire Insurance Company, Halifax, N.S.	F. W. Rounsefell, Vancouver	Fire.
Ætna Insurance Co., Hartford, Conn.	J. E. Kinsman, Victoria	Automobile, insurance against loss of or damage to property resulting from an earthquake, explosion (including riot and civil commotion), fire, hail, inland transportation, marine, and tornado.
Ætna Life Insurance Co., Hartford, Conn.	Gordon Bell, Vancouver	Life.
Agricultural Insurance Company, Watertown, New York	J. J. Banfield, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), explosion, fire, and inland transportation.
Alliance Assurance Co., Ltd., London, Eng.	W. Anderson and H. Miskin, Vancouver	Accident, automobile, burglary, fire, guarantee, marine, plate glass, sickness, inland transportaton, and automobile.
Alliance Insurance Co. of Philadelphia, Pa.	J. H. Harrison, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), fire, inland transportation, and marine.
American Alliance Insurance Co., New York, N.Y.	C. V. Wakely, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person) and fire.
American Automobile Insurance Co., St. Louis, Mo.	G. I. ap Roberts, Vancouver	Automobile.
American Central Insurance Company, St. Louis, Mo.	D. W. Campbell, Victoria	Automobile, explosion (including riot and civil commotion), fire, and tornado.
American Credit Indemnity Company of New York-St. Louis, Mo.	D. B. Campbell, Vancouver	Credit.
American Equitable Assurance Company of New York, N.Y.	G. H. L. Hobson, Vancouver	Fire.
The American Insurance Company, Newark, N.J.	T. W. B. London, Vancouver	Fire.
The Anglo Scottish General Commercial Ins. Co., Ltd., London, Eng.	T. W. Greer, Vancouver	Fire.
Atlas Assurance Company, Limited, London, England	*John S. Gall, Vancouver †F. B. Lewis, Vancouver	Fire and marine.
The Autocar Fire & Accident Insurance Company, Limited, London, Eng.	Alfred W. McLeod, Vancouver	Accident, automobile, fire, plate glass, and sickness.
Automobile Insurance Co. of Hartford, Conn., Hartford, Conn.	B. G. D. Phillips, Vancouver	Inland marine, inland transportation, and ocean marine.
Baloise Fire Insurance Company, Basle, Switzerland	A. S. Matthew, Vancouver	Fire.
Bankers & Traders' Insurance Company, Limited, Sydney, Australia	G. H. L. Hobson, Vancouver	Fire.
Beaver Fire Insurance Company, Winnipeg, Man.	Waghorn, Gwynn & Co., Ltd., Vancouver	Fire.
The Boiler Inspection & Insurance Co. of Canada, Toronto, Ont.	R. V. Winch & Co., Ltd., Vancouver	Boiler and machinery.
Boston Insurance Co., Boston, Mass.	A. S. Matthews, Vancouver	Marine and fire.
British America Assurance Co., Toronto, Ont.	F. W. Rounsefell, Vancouver	Accident, automobile, burglary, explosion, fire, guarantee, hail, inland marine, inland transportation, lightning, ocean marine, plate glass, sickness, and tornado.
The British & European Insurance Company, Limited, London, England	Gordon Gray, Vancouver	Fire.
The British and Foreign Marine Insurance Co., Ltd., Liverpool, Eng.	B. G. D. Phillips, Vancouver	Inland transportation, marine, and sprinkler leakage.
The British Colonial Fire Insurance Company, Montreal, Que.	Harold Darling, Vancouver	Fire, tornado, and automobile.
(1.) The British Columbia Plate Glass Insurance Co., Vancouver, B.C.	Head Office, Vancouver	Plate glass.
The British Crown Assurance Corporation, Ltd., Glasgow, Scotland.	A. S. Matthew, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person) and fire.
The British General Insurance Company, Limited, London, England.	J. H. Gillespie, Victoria	Automobile, fire, and tornado.
British Law Insurance Company, Limited, London, England.	C. W. Stoess, Vancouver	Automobile and fire.
British North Western Fire Insurance Company, Toronto, Ont.	K. G. McCandless, Vancouver	Fire.
The British Oak Insurance Company, Limited, London, England.	Victor W. Odlum, Vancouver	Fire.
British Traders Insurance Co., Ltd., Victoria, Hong Kong.	C. R. Elderton, Vancouver	Automobile, fire, marine, and tornado.
Caledonian American Insurance Company, New York, N.Y.	Fred A. Burgess, Vancouver	Fire.

LIST OF INSURERS LICENSED UNDER THE "INSURANCE ACT"—*Continued.*

Name of Insurer and Head Office.	Attorney appointed under the Act.	Class of Insurance for which Licensed.
Caledonian Insurance Company, Edinburgh, Scotland	Fred A. Burgess, Vancouver	Fire.
California Insurance Company, San Francisco, Cal	John Anderson, Vancouver	Fire.
The Canada Accident and Fire Assurance Co., Montreal, Que	John Anderson, Vancouver	Accident, automobile, burglary, fire, guarantee, plate glass, and sickness.
Canada Life Assurance Co., Toronto, Ont	R. G. McCuish, Vancouver	Life.
Canada National Fire Insurance Company, Winnipeg, Man	William McLeish, Victoria	Fire.
Canada Security Assurance Company, Toronto, Ont	R. E. Brett, Victoria	Automobile, fire, tornado, plate glass, and inland transportation.
Canadian Fire Insurance Company, Winnipeg, Man	F. C. Paterson, Victoria	Automobile, burglary, explosion, fire, guarantee, hail, live stock, plate glass, and tornado.
Canadian General Insurance Company, Toronto, Ont	G. H. L. Hobson, Vancouver	Automobile, live stock, and plate glass.
The Canadian Indemnity Company, Winnipeg, Man	A. McC. Creery, Vancouver	Fire.
The Canadian Surety Co., Toronto, Ont	F. B. Lewis, Vancouver	Accident, automobile, burglary, fire (limited to insuring automobiles), forgery, guarantee, plate glass, and sickness.
The Capital Life Assurance Co. of Canada, Ottawa, Ont	W. D. Kennedy, Vancouver	Life.
Car and General Insurance Corporation, Ltd., London, Eng	J. H. Lawson, Vancouver	Accident, automobile, fire, hail, and sickness.
The Casualty Company of Canada, Toronto, Ontario	J. C. Stuart, Vancouver	Automobile, burglary, fire, plate glass, accident, sickness, and guarantee.
The Central Insurance Company, Limited, London, England	C. H. Macaulay, Vancouver	Automobile and fire.
The Century Insurance Company, Limited, Edinburgh, Scotland	Thos. W. Greer, Vancouver	Automobile, fire, guarantee (limited to the guaranteeing of the fidelity of persons in positions of trust, public or private, and executing bonds in legal actions and proceedings), and plate glass.
The China Fire Insurance Co., Ltd., Victoria, Hong Kong	C. R. Elderton, Vancouver	Automobile, fire, and marine.
Citizens Insurance Company of Missouri, St. Louis, Mo	Chas. H. Macaulay, Vancouver	Fire.
Columbia Insurance Company, Jersey City, N.J	F. W. Rounsefell, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), fire, and inland transportation.
Commercial Union Assurance Company, Limited, London, Eng	John Anderson, Vancouver	Accident, automobile, burglary, fire, inland transportation, life, plate glass, sickness, and tornado.
Commercial Union Fire Insurance Company of New York	John Anderson, Vancouver	Fire.
Confederation Life Association, Toronto, Ont	H. R. Glass, Vancouver	Life.
Connecticut Fire Insurance Company, Hartford, Conn	Robt. H. Swinerton, Victoria	Fire and insurance against loss of or damage to property resulting from an earthquake.
Continental Casualty Co., Hammond, Ind	A. S. Matthew, Vancouver	Accident, automobile, plate glass, and sickness.
Continental Insurance Company, New York, N.Y	W. A. Lawson, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), explosion, fire, inland transportation, marine, and tornado.
The Continental Life Insurance Co., Toronto, Ont	James Moss, Victoria	Life.
The Cornhill Insurance Company, Limited, London, England	E. A. Robison, Vancouver	Automobile, fire, and tornado.
The Crown Life Insurance Co., Toronto, Ont	F. R. McD. Russell, Vancouver	Life.
Dominion Fire Insurance Company, Toronto, Ont	George W. Brown, Vancouver	Automobile and fire.
Dominion Gresham Guarantee & Casualty Co., Montreal, Que	Frank Parsons, Vancouver	Accident, automobile, burglary, fire, guarantee, inland transportation, plate glass, and sickness.
The Dominion Life Assurance Co., Waterloo, Ont	John T. McCay, Vancouver	Life.
The Dominion of Canada Guarantee & Accident Ins. Co., Toronto, Ont.	J. C. Stuart, Vancouver	Accident, automobile, boiler and machinery, burglary, fire, guarantee, inland transportation, life, plate glass, and sickness.

The Eagle Star & British Dominions Insurance Co., Ltd., London, Eng.	Loewen, Harvey & Preston, Ltd., Vancouver.	Automobile (limited to insurance against loss or damage from accident or injury suffered by an employee or other persons caused by an automobile for which the owner is liable), fire, marine, and plate glass.
(2.) Empire Life Insurance Company, Toronto, Ont.	A. H. Douglas, Vancouver	Life, accident, and sickness.
Employers Liability Assurance Corporation, Ltd., London, Eng.	Jas. A. Young, Vancouver	Accident, automobile, boiler and machinery, burglary, explosion, fire, forgery, guarantee, plate glass, sickness, and tornado.
Ensign Insurance Company, Toronto, Ont.	George W. Brown, Vancouver	Fire.
Equitable Fire & Marine Insurance Co., Providence, R.I.	C. V. Wakely, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person) and fire.
The Essex and Suffolk Equitable Insurance Society, Ltd., London, Eng.	H. B. Leuty, Vancouver	Fire.
The Excelsior Life Insurance Co., Toronto, Ont.	F. J. Gillespie, Vancouver	Life.
The Fidelity & Casualty Co. of New York, N.Y.	Seeley & Co., Vancouver	Accident, boiler and machinery, burglary, guarantee, plate glass, and sickness.
Fidelity Insurance Company of Canada, Toronto, Ont.	Leslie H. Wright, Vancouver	Accident, automobile, burglary, guarantee, plate glass, and sickness.
Fidelity Phenix Fire Insurance Co., New York, N.Y.	Arthur Coles, Victoria	Automobile (excluding insurance against loss by reason of bodily injury to the person), explosion (including riot and civil commotion), fire, inland transportation, and tornado.
Fire Association of Philadelphia, Philadelphia, Pa.	E. C. Jahour, Vancouver	Fire, tornado, and automobile.
The Fire Insurance Company of Canada, Montreal, Que.	C. D. J. Christie, Vancouver	Fire.
Fireman's Fund Insurance Co., San Francisco, Cal.	E. D. Todd, Victoria	Automobile (excluding insurance against loss by reason of bodily injury to the person), fire, inland transportation, marine, and tornado.
Firemen's Insurance Co. of Newark, N.J.	G. W. Brown, Vancouver	Fire and marine.
First American Fire Insurance Co., New York, N.Y.	R. B. Leigh, Vancouver	Fire, inland transportation, and tornado.
The Franklin Fire Insurance Company of Philadelphia, Pa.	Sam Clegg, Victoria	Automobile (excluding insurance against loss by reason of bodily injury to the person), fire, hail, marine, and tornado.
The General Accident Assurance Co. of Canada, Toronto, Ont.	W. F. Sangster, Vancouver	Accident, automobile, boiler and machinery, burglary, fire, guarantee, plate glass, and sickness.
General Accident Fire & Life Assur. Corporation, Ltd., Perth, Scotland.	Alfred W. McLeod, Vancouver	Automobile, burglary, accident, fire, hail, plate glass, sickness, and tornado.
General Exchange Insurance Corporation, New York, N.Y.	Charles H. Macaulay, Vancouver	Automobile (excluding insurance against liability for loss by reason of bodily injury to the person).
General Fire Assurance Company of Paris, France.	Robert Cram, Vancouver	Fire.
The Girard Fire & Marine Insurance Company, Philadelphia, Pa.	W. E. Martin, Vancouver	Fire.
Glens Falls Insurance Co., Glens Falls, N.Y.	B. G. D. Phillips, Vancouver	Automobile, insurance against loss of or damage to property resulting from an earthquake, explosion (including riot and civil commotion), fire, hail, inland transportation, and tornado.
Globe & Rutgers Fire Insurance Co., New York, N.Y.	A. McC. Creery, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), insurance against loss of or damage to property resulting from an earthquake, explosion (except steam-boilers, pipes, fly-wheels, engines, and machinery connected therewith or operated thereby), fire, inland transportation, and marine.
The Globe Indemnity Co. of Canada, Montreal, Que.	F. W. Rounsefell, Vancouver	Accident, automobile, burglary, fire, forgery, guarantee, and sickness.
The Grain Dealers National Mutual Fire Insurance Co., Indianapolis, Ind.	John H. Constantine, Vancouver	Fire.
Great American Insurance Co., New York, N.Y.	S. Burke, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person, explosion (including riot and civil commotion), fire, hail, inland transportation, marine, and tornado.
The Great West Life Assurance Co., Winnipeg, Man.	J. A. Johnson, Vancouver	Life.
The Guarantee Company of North America, Montreal, Que.	C. A. Holland, Victoria	Guarantee.

LIST OF INSURERS LICENSED UNDER THE "INSURANCE ACT"—*Continued.*

Name of Insurer and Head Office.	Attorney appointed under the Act.	Class of Insurance for which Licensed.
Guardian Assurance Company, Limited, London, England	W. S. Day, Vancouver	Fire.
The Guardian Insurance Co. of Canada, Montreal, Que.	W. S. Day, Vancouver	Accident, automobile, boiler and machinery, burglary, explosion, fire, guarantee, inland transportation, plate glass, sickness, and tornado.
Halifax Fire Insurance Co., Halifax, N.S.	Wm. B. Blane, Vancouver	Automobile, fire, and plate glass.
Hardware Dealers Mutual Fire Insurance Co., Stevens Point, Wis.	Gordon B. Robb, Vancouver	Fire (to the extent authorized by the Company's articles of incorporation).
Hartford Accident and Indemnity Company, Hartford, Conn.	H. R. Budd, Vancouver	Accident, automobile, burglary, guarantee, live stock, plate glass, and sickness.
Hartford Fire Insurance Co., Hartford, Conn.	G. A. Kirk, Victoria	Automobile (excluding insurance against loss by reason of bodily injury to the person), insurance against loss of or damage to property resulting from an earthquake, explosion (including riot and civil commotion), fire, hail, inland transportation, tornado, and weather.
Home Assurance Company of Canada, Calgary, Alberta	A. I. Fisher, Fernie	Accident, sickness, automobile, and inland transportation.
Home Insurance Co., New York, N.Y.	H. W. Dyson, Vancouver	Automobile, burglary, explosion (including riot and civil commotion), fire, hail, inland transportation, marine, property damage, tornado, and weather.
Hudson Bay Insurance Company, Montreal, Quebec	Frederick W. Walker, Vancouver	Fire and tornado.
Imperial Assurance Company, New York, N.Y.	F. W. Rounsefell, Vancouver	Fire.
The Imperial Insurance Office, Toronto, Ont.	R. V. K. Rankin, Vancouver	Accident, automobile, fire, guarantee, plate glass, sickness, and tornado.
The Imperial Life Assurance Co. of Canada, Toronto, Ont.	Stanley Henderson, Vancouver	Life.
Indemnity Insurance Co., of North America, Philadelphia, Pa.	J. Hunter Harrison, Vancouver	Automobile.
Insurance Company of North America, Philadelphia, Pa.	J. H. Harrison, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), insurance against loss of or damage to property resulting from an earthquake, explosion (including riot and civil commotion), fire, inland transportation, and marine.
The Insurance Company of the State of Pennsylvania, Philadelphia, Pa.	H. A. Robertson, Vancouver	Fire, inland marine, and marine.
Laurentian Insurance Co., Montreal, Que.	C. D. J. Christie, Vancouver	Fire.
Law, Union & Rock Insurance Co., Ltd., London, Eng.	A. W. Blake, Vancouver	Accident, automobile, burglary, fire, guarantee, plate glass, sickness, and tornado.
Liverpool & London & Globe Insurance Co., Ltd., Liverpool, Eng.	R. C. Hall, Victoria	Accident, automobile, burglary, fire, guarantee, inland transportation, plate glass, and sickness.
The Liverpool-Manitoba Assurance Company, Montreal, Que.	L. U. Conyers, Victoria	Automobile, explosion (including riot and civil commotion), and fire.
The London & Lancashire Guarantee & Accident Co. of Canada, Toronto, Ont.	A. W. Blake, Vancouver	Accident, automobile, burglary, fire, guarantee, plate glass, sickness, and insurance against loss or damage occasioned by larceny, theft, or stealing from the person by violence, threat, hold-up, or otherwise.
The London & Lancashire Insurance Co., Ltd., Liverpool, England	A. W. Blake, Vancouver	Automobile, explosion (including riot and civil commotion), fire, marine, and tornado.
London & Provincial Marine & General Ins. Co., Ltd., London, Eng.	†R. V. Winch & Co., Ltd., Victoria *J. H. Watson, Vancouver	Accident, automobile, burglary, fire, guarantee, marine, plate glass, and sickness.

The London & Scottish Assurance Corporation, Limited, London, Eng.	N. R. Bailey, Vancouver	Accident, automobile, burglary, fire, hail, life, plate glass, and sickness.
London Assurance Corporation, London, Eng.	†R. V. Winch & Co., Ltd., Victoria *James Wise, Victoria	Automobile, fire, inland marine, inland transportation, and marine.
London Guarantee & Accident Co., Ltd., London, Eng.	R. C. Janion, Vancouver	Accident, automobile, burglary, fire, guarantee, plate glass, and sickness.
London-Canada Insurance Company, Toronto, Ont.	Frank Parsons, Vancouver	Automobile and fire.
The London Life Insurance Co., London, Ont.	W. H. Colclough, Vancouver	Life.
Loyal Protective Insurance Co., Boston, Mass.	G. H. Grant, Vancouver	Accident and sickness.
Lumbermen's Mutual Casualty Company, Chicago, Ill.	J. H. Constantine, Vancouver	Accident (excluding insurance against loss by reason of bodily injury to the person), automobile (excluding insurance against loss or damage by fire or theft), and plate glass.
The Manufacturers Life Insurance Co., Toronto, Ont.	B. A. Twiss, Vancouver	Life.
The Marine Insurance Co., Ltd., London, Eng.	A. A. Meharey, Victoria	Automobile, fire, inland marine, inland transportation, and marine.
Maritime Insurance Co., Ltd., Liverpool, Eng.	Vancouver Insurance, Vessel Agency, Ltd., Vancouver	Marine.
Maryland Casualty Co., Baltimore, Maryland	H. T. Barnes, Victoria	Accident, automobile (excluding insurance against loss or damage by fire), boiler and machinery, burglary, forgery, fly-wheel, guarantee, plate glass, and sickness.
Mechanics & Traders Insurance Company, New Orleans, La.	W. J. Mills, Vancouver	Fire.
Mercantile Fire Insurance Company, Waterloo, Ont.	A. W. Blake, Vancouver	Fire.
Merchants Casualty Insurance Co., Waterloo, Ont.	J. B. Love, Vancouver	Accident, automobile, and sickness.
Merchants Fire Assurance Corporation of New York, N.Y.	G. H. L. Hobson, Vancouver	Fire.
The Merchants Marine Insurance Co., Ltd., London, England	James A. Young, Vancouver	Automobile and fire.
Metropolitan Life Insurance Co., New York, N.Y.	N. O. Haugh, Victoria	Accident, life, and sickness.
Millers National Insurance Company, Chicago, Ill.	Charles D. J. Christie, Vancouver	Fire.
Mill Owners Mutual Fire Insurance Company of Iowa, Des Moines, Iowa	John H. Constantine, Vancouver	Fire.
Minnesota Implement Mutual Fire Insurance Co., Owatonna, Minn.	Gordon B. Robb, Vancouver	Fire (to the extent authorized by the Company's articles of association).
The Monarch Life Assurance Co., Winnipeg, Man.	R. W. Harris, Vancouver	Life.
Montreal Life Insurance Company, Montreal, Que.	H. Higginbotham, Vancouver	Life.
The Motor Union Insurance Company, Limited, London, Eng.	W. W. Johnston, Vancouver	Accident, automobile, fire, marine, and plate glass.
The Mount Royal Assurance Company, Montreal, Quebec	Fred A. Burgess, Vancouver	Automobile, fire, and plate glass.
Mutual Fire Insurance Co. of British Columbia	Vancouver	Fire.
The Mutual Life and Citizens' Assurance Co., Ltd., Sydney, Australia	F. R. McDonald Russell, Vancouver	Life.
The Mutual Life Assurance Co. of Canada, Waterloo, Ont.	W. J. Twiss, Vancouver	Life.
The Mutual Life Insurance Co. of New York, N.Y.	W. E. Burns, Vancouver	Life.
National Ben Franklin Fire Insurance Company, Pittsburgh, Pa.	J. H. Johnston, Victoria	Fire.
The Nationale Fire Insurance Company of Paris, France	George H. L. Hobson, Vancouver	Fire.
National Fire Insurance Co. of Hartford, Hartford, Conn.	H. T. Barnes, Victoria	Automobile (excluding insurance against loss by reason of bodily injury to the person), explosion (including riot and civil commotion), fire, inland transportation, marine, and tornado.
National Life Assurance Co. of Canada, Toronto, Ont.	J. H. Ballantyne, Vancouver	Life.
National Provincial Insurance Co., Ltd., London, Eng.	†F. W. Rounsefell, Vancouver *A. M. English, Vancouver	Fire and plate glass.
National Surety Co., New York, N.Y.	H. N. Galer, Vancouver	Burglary, credit, forgery, fraud, and guarantee.
National Union Fire Insurance Company, Pittsburgh, Pa.	E. E. Rand, Vancouver	Fire.
The Newark Fire Insurance Co., Newark, N.J.	F. W. Walker, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), fire, marine, and tornado.
New Hampshire Fire Insurance Company, Manchester, N.H.	Henry C. Macaulay, Vancouver	Fire and inland transportation.

LIST OF INSURERS LICENSED UNDER THE "INSURANCE ACT"—*Continued.*

Name of Insurer and Head Office.	Attorney appointed under the Act.	Class of Insurance for which Licensed.
New Jersey Insurance Company, Newark, N.J.	H. A. Robertson, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), fire, and marine.
New York Life Insurance Co., New York, N.Y.	M. H. Garwood, Vancouver	Life.
New York Underwriters Insurance Co., New York, N.Y.	John Hart, Vancouver	Automobile (excluding insurance against liability for loss by reason of bodily injury to the person), explosion, fire, hail, marine, and tornado.
Niagara Fire Insurance Co., New York, N.Y.	D. Leeming, Victoria	Automobile (including damage to automobiles in transit by rail), explosion (including riot and civil commotion), fire, insurance against loss of or damage to property resulting from an earthquake, marine, and tornado.
The North American Accident Insurance Co., Montreal, Que.	J. E. Sears, Vancouver	Accident, automobile, burglary, fire (limited to insuring automobiles against fire), plate glass, and sickness.
North American Life Assurance Co., Toronto, Ont.	Ellis W. Keenleyside, Vancouver	Life.
North British & Mercantile Insurance Co., Ltd., London, England	H. R. Budd, Vancouver	Fire, marine, accident, automobile, inland transportation, burglary, plate glass, sickness, tornado, and guarantee.
North Empire Fire Insurance Company, Toronto, Ont.	John W. Wilson, Vancouver	Fire.
Northern Assurance Company, Ltd., London, Eng.	W. G. Gerrard, Vancouver	Accident, automobile, burglary, fire, guarantee, marine, plate glass, and sickness.
The Northern Life Assurance Co. of Canada, London, Ont.	Jas. G. Wilson, Vancouver	Life.
The North River Insurance Co., New York, N.Y.	John J. Banfield, Vancouver	Explosion, fire, and tornado.
Northwestern Mutual Fire Association, Seattle, Wash.	J. H. Constantine, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person) and fire.
Northwestern National Insurance Co., Milwaukee, Wis.	W. B. Blane, Vancouver	Automobile and fire.
North West Fire Insurance Company, Winnipeg, Man.	W. W. Johnston, Vancouver	Fire.
Norwich Union Fire Insurance Society, Ltd., Norwich, Eng.	B. S. Heisterman, Victoria	Accident, automobile, burglary, fire, guarantee, plate glass, sickness, tornado, and inland transportation.
Norwich Union Life Insurance Society, Norwich, Eng.	B. S. Heisterman, Victoria	Life.
Occidental Fire Insurance Company, Toronto, Ont.	A. S. Matthew, Vancouver	Automobile, fire, hail, and tornado.
The Ocean Accident & Guarantee Corporation, Ltd., London, Eng.	W. B. Hickman, Vancouver	Accident, automobile, boiler and machinery, burglary, fire, guarantee, plate glass, and sickness.
Ocean Marine Insurance Company, Limited, London, Eng.	R. V. Winch & Co., Ltd., Victoria	Marine.
(3.) The Ontario Equitable Life and Accident Insurance Co., Waterloo, Ont.	C. E. Mooney, Vancouver	Life.
Pacific Coast Fire Insurance Company, Vancouver	T. W. Greer, Vancouver	Automobile and fire.
Palatine Insurance Company, Limited, London, Eng.	John Anderson, Vancouver	Automobile and fire.
The Patriotic Assurance Company, Limited, Dublin, Ireland	R. V. Kentish Rankin, Vancouver	Fire.
The Phenix Fire Insurance Company of Paris, France	J. A. Griffith, Victoria	Fire.
Phoenix Assurance Co., Ltd., London, Eng.	F. W. Rounsefell, Vancouver	Automobile, fire, life, and marine.
The Phoenix Insurance Co., Hartford, Conn.	A. E. Haynes, Victoria	Automobile (excluding insurance against loss by reason of bodily injury to the person), fire, and marine.
The Preferred Accident Insurance Company of New York, N.Y.	H. A. Robertson, Vancouver	Accident, automobile, and sickness.
The Protective Association of Canada, Granby, Que.	F. G. Bell, Vancouver	Accident and sickness restricted to members of the Masonic Order.
Providence Washington Insurance Company, Providence, R.I.	H. T. Devine, Vancouver	Fire.
Provincial Insurance Company, Limited, Bolton, England	W. B. Blane, Vancouver	Automobile, fire, and tornado.
The Prudential Assurance Company, Limited, London, England	W. S. Day, Vancouver	Fire.

The Prudential Insurance Co. of America, Newark, N.J.	S. W. Shepard, Vancouver	Accident, life, and sickness.
Quebec Fire Assurance Company, Quebec, Que.	A. W. Blake, Vancouver	Fire.
Queen Insurance Co. of America, New York, N.Y.	Rithet Consolidated, Limited, Victoria	Automobile, fire, inland transportation, and marine.
Queensland Insurance Co., Ltd., Sydney, Australia	*Robert Bone, Vancouver †B. D. G. Phillips, Vancouver	Fire and marine.
Railway Passengers Assurance Co., London, Eng.	S. C. Hopkins, Vancouver	Accident, automobile, fire, guarantee, plate glass, sickness, and burglary.
Reliance Insurance Company of Canada, Montreal, Que.	Chas. V. Wakely, Vancouver	Fire.
Reliance Marine Insurance Co., Limited, Liverpool, Eng.	Simpson, Roberts & Co., Ltd., Vancouver	Marine.
The Retail Hardware Mutual Fire Insurance Company, Minneapolis, Minn.	Gordon B. Robb, Vancouver	Fire (to the extent authorized by the Company's articles of association).
The "Rossia" Reinsurance Company, Limited, Copenhagen, Denmark.	A. S. Matthew, Vancouver	Fire.
Royal Exchange Assurance, London, Eng.	J. H. Lawson, Vancouver	Accident, automobile, fire, sickness, guarantee, and burglary.
Royal Insurance Co., Ltd., Liverpool, Eng.	F. W. Walker, Vancouver	Accident, automobile, boiler and machinery, burglary, fire, forgery, guarantee, life, marine, plate glass, sickness, tornado, and fly-wheel.
(4.) Royal Plate Glass Insurance Company of Canada, Vancouver, B.C.	Head Office, Vancouver	Plate glass.
The Royal Scottish Insurance Company, Limited, Glasgow, Scotland.	W. G. Gerrard, Vancouver	Fire.
St. Paul Fire & Marine Insurance Co., St. Paul, Minn.	B. S. Heisterman, Victoria	Automobile, fire, inland transportation, and marine.
Scottish Canadian Assurance Corporation, Toronto, Ont.	A. W. McLeod, Vancouver	Fire.
Scottish Metropolitan Assurance Company, Ltd., Edinburgh, Scotland.	W. G. Gerrard, Vancouver	Accident, automobile, fire, guarantee, inland marine, marine, plate glass, and sickness.
Scottish Union & National Insurance Co., Edinburgh, Scotland	F. B. Pemberton, Victoria	Automobile, fire, and tornado.
The Sea Insurance Company, Limited, Liverpool, England	Harold Darling, Vancouver	Fire.
Security Insurance Company of New Haven, Conn.	Frank B. Lewis, Vancouver	Fire.
The Security Life Insurance Company of Canada, Toronto, Ont.	J. B. Love, Vancouver	Life.
The Sovereign Life Assurance Co., Winnipeg, Man.	R. L. Hunt, Vancouver	Life.
Springfield Fire & Marine Insurance Company, Springfield, Mass.	Chas. H. Macaulay, Vancouver	Fire.
The Standard Life Assurance Co., Edinburgh, Scotland.	James P. Collins, Vancouver	Life.
Standard Marine Insurance Co., Ltd., Liverpool, Eng.	C. Gardiner Johnson, Vancouver	Inland transportation and marine.
State Assurance Co., Ltd., Liverpool, Eng.	James H. Lawson, Vancouver	Fire.
Stuyvesant Insurance Company, New York, N.Y.	H. A. Robertson, Vancouver	Fire.
Sun Insurance Office, London, England	R. V. K. Rankin, Vancouver	Accident, automobile, fire, guarantee, plate glass, sickness, and tornado.
Sun Life Assurance Co. of Canada, Montreal, Que.	W. W. Hutton, Vancouver	Life.
(5.) Toronto Casualty, Fire & Marine Insurance Co., Toronto, Ont.	Douglas Armour, Vancouver	Accident, automobile, burglary or robbery, fire, guarantee, inland marine, inland transportation, ocean marine, plate glass, sickness, theft, and insurance against loss or damage or liability or loss or damage to persons or property arising from any accidental cause.
The Travelers Indemnity Company, Hartford, Conn.	Robert S. Lennie, Vancouver	Accident, automobile, boiler and machinery, burglary, fly-wheel, and plate glass.
The Travelers Insurance Co., Hartford, Conn.	Robert S. Lennie, Vancouver	Accident, life, and sickness.
Union Assurance Society, Limited, London, England	*W. W. Johnston, Vancouver †Chas. R. Bishop, Victoria	Accident, automobile, burglary, fire, inland transportation, plate glass, sickness, and tornado.
The Union Fire Insurance Company, Paris, France	Franco-Canadian Company, Limited, Vancouver	Fire.
Union Insurance Society of Canton, Ltd., Victoria, Hong Kong	C. R. Elderton, Vancouver	Accident, automobile, fire, inland transportation, marine, sickness, and tornado.

LIST OF INSURERS LICENSED UNDER THE "INSURANCE ACT"—*Continued.*

Name of Insurer and Head Office.	Attorney appointed under the Act.	Class of Insurance for which Licensed.
The Union Marine Insurance Company, Ltd., Liverpool, Eng.	C. H. Macaulay, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), fire, inland marine, inland transportation, and marine.
Union Mutual Life Insurance Co., Portland, Maine	Viggo F. Laursen, Vancouver	Life.
United British Insurance Company, Limited, London, England	C. F. Millar, Vancouver	Automobile and fire.
United Mutual Fire Insurance Co., Boston, Mass.	J. H. Constantine, Vancouver	Fire and tornado.
United States Fidelity & Guaranty Co., Baltimore, Md.	Leslie H. Wright, Vancouver	Accident, automobile, burglary, forgery, guarantee, plate glass, and sickness.
United States Fire Insurance Co., New York, N.Y.	H. A. Robertson, Vancouver	Automobile (excluding insurance against loss by reason of bodily injury to the person), explosion (including riot and civil commotion), and fire.
United States Merchants & Shippers Insurance Co., New York, N.Y.	B. G. D. Phillips, Vancouver	Marine.
Westchester Fire Insurance Company, New York, N.Y.	Alfred W. McLeod, New Westminster	Explosion (including riot and civil commotion), fire, insurance against loss of or damage to property resulting from an earthquake, and marine.
Western Assurance Company, Toronto, Ont.	V. W. Odlum, Vancouver	Accident, automobile, burglary, explosion (including riot and civil commotion), fire, guarantee, inland transportation, lightning, marine, plate glass, sickness, and tornado.
The Western Casualty Company, Denver, Col.	W. H. Biegel, Vancouver	Accident and sickness.
The Western Empire Life Assurance Co., Winnipeg, Man.	A. Whealler and R. Symes, Vancouver	Life.
The Western Life Assurance Co., Winnipeg, Man.	G. W. Morfitt, Vancouver	Life.
The World Fire and Marine Insurance Company, Hartford, Conn.	R. Long, Vancouver	Automobile, fire, inland transportation, insurance against loss of or damage to property resulting from an earthquake, and tornado.
The World Marine & General Insurance Co., Ltd., London, Eng.	W. H. Walton, Vancouver B. G. D. Phillips, Vancouver	Accident, automobile, burglary, explosion, fire, guarantee, inland transportation, marine, plate glass, and sickness.
The Yang-tsze Insurance Association, Ltd., Shanghai, China	B. G. D. Phillips, Vancouver	Fire and marine.
The Yorkshire Insurance Co., Ltd., York, Eng.	H. W. Dyson, Vancouver	Accident, automobile, burglary, fire, guarantee, live stock, plate glass, and sickness.
Zurich General Accident and Liability Ins. Co., Ltd., Zurich, Switzerland	A. K. Henderson, Vancouver	Accident, automobile, boiler and machinery, burglary, plate glass, and sickness.

SECURITIES (PAR VALUE) DEPOSITED UNDER THE ACT.

(1.) War Loan Bonds, $1,000; Municipal Securities, $5,000; B.C. Inscribed Stock, $973.32.

(2.) Hydro Electric Power Commission Ontario Bonds, $10,000; Canadian Northern Pacific Railway Co. Stock, £600; British Columbia Bonds, $13,000.

(3.) Canadian Northwestern Railway 4½-per-cent. Stock, £4,800; District of Burnaby 5-per-cent. Bonds, $10,000.

(4.) Deposit Receipt, Canadian Bank of Commerce, $325; C.N.O. Railway Co. 3½-per-cent. Stock, £1,320.

(5.) Ontario Government Bonds, $25,000.

* Appointed under former "Fire Insurance Act."

† Appointed under former "Insurance Act."

LIST OF RECIPROCAL EXCHANGES TO WHICH PERMITS UNDER SECTION 174 OF THE "INSURANCE ACT" HAVE BEEN GRANTED.

Affiliated Underwriters, New York, N.Y.
Epperson Underwriters, Kansas City, Mo.
Equitable Fire Underwriters, Kansas City, Mo.
Individual Underwriters, New York, N.Y.
Inter-Insurers Exchange, Kansas City, Mo.
Lumbermen's Underwriting Alliance, Kansas City, Mo.
Manufacturing Lumbermen's Underwriters, Kansas City, Mo.
National Lumber Manufacturers Inter Insurance Exchange, Chicago, Ill.
New York Reciprocal Underwriters, New York, N.Y.
Sprinklered Risk Underwriters, Chicago, Ill.
Underwriters Exchange, Kansas City, Mo.

FRATERNAL SOCIETIES LICENSED.

The Grand Council of the Canadian Order of Chosen Friends, Hamilton, Ontario. F. E. Flewwelling, Vancouver. Life insurance and sick and funeral benefits.

Odd Fellows' Relief Association of Canada, Kingston, Ontario. P. W. Dempster, Victoria. Life insurance.

Sons of Scotland Benevolent Association, Toronto, Ont. Henry O. MacDonald, Vancouver. Life insurance and sickness and funeral benefits.

NOTE.—Licensed since December 31st, 1926 :—

Commercial Life Assurance Company of Canada, Edmonton, Alta.; W. A. Cantelon, Vancouver; life.

Federated British Insurance Company, Limited, London, England; B. G. D. Phillips, Vancouver; fire.

General Insurance Company of America, Seattle, Wash.; J. A. Humbird, Chemainus; fire and tornado.

Ohio Farmers Insurance Company, LeRoy, Ohio; John McWilliams, Vancouver; fire, inland transportation, and automobile (excluding personal injury). (Securities, $25,000.)

Pioneer Insurance Company, Winnipeg, Man.; Gordon Bell, Vancouver; fire.

Saint Paul Mercury Indemnity Company of Saint Paul, Wilmington, Delaware; B. S. Heisterman, Victoria; automobile (excluding insurance against loss or damage by fire).

Wawanesa Mutual Insurance Company, Wawanesa, Man.; J. E. Coxsworth, Victoria; fire. (Securities, $25,000.)

LIST OF UNDERWRITERS' AGENCIES LICENSED UNDER THE "INSURANCE ACT."

Britannic Underwriters, representing Employers Liability Assurance Corporation, Limited.
British & Canadian Underwriters, representing Norwich Union Fire Insurance Society, Limited.
British Empire Underwriters Agency, representing British America Assurance Company.
Canadian Hardware & Implement Underwriters, representing Retail Hardware Mutual Fire Insurance Company, Minnesota Implement Mutual Fire Insurance Company, and Hardware Dealers Mutual Fire Insurance Co.
Canadian Pacific Underwriters Agency, representing Merchants Fire Assurance Corporation of New York.
Canadian Underwriters Agency, representing Baloise Fire Insurance Company.
Colonial Fire Underwriters Agency, representing National Fire Insurance Company of Hartford.
Delaware Underwriters, representing Westchester Fire Insurance Company.
Edinburgh Underwriters Agency, representing Scottish Union & National Insurance Company.
Federal Underwriters, Limited, representing Canada National Fire Insurance Company.
Globe Underwriters Agency, representing Globe & Rutgers Fire Insurance Co.
Imperial Guarantee & Accident Underwriters, representing British America Assurance Company and Western Assurance Company.
London Underwriters Agency, representing London Assurance Corporation.
Minnesota Underwriters Agency, representing St. Paul Fire & Marine Insurance Company.
New Haven Underwriters, representing Security Insurance Company of New Haven, Conn.
Nova Scotia Fire Underwriters Agency, representing Home Insurance Company.
Retail Merchants Underwriters Agency, representing Northwestern Mutual Fire Association.
Rochester Underwriters Agency, representing Great American Insurance Company.
St. Lawrence Underwriters Agency, representing Western Assurance Company.
Winnipeg Fire Underwriters Agency, representing Home Insurance Company.

TABLE I.—NET FIRE INSURANCE PREMIUMS AND NET LOSSES, 1926.

Name of Company.	Net Premiums.	Net Amount of Losses incurred.	Net Amount of Losses paid.
Acadia Fire Insurance Co.	$ 47,840 04	$ 26,473 18	$ 25,924 50
Aetna Insurance Co.	72,546 47	37,814 46	40,613 24
Agricultural Insurance Co.	15,644 26	12,504 75	4,492 75
Alliance Assurance Co., Ltd.	42,809 96	28,693 51	30,261 51
Alliance Insurance Co. of Philadelphia	19,206 14	17,057 33	12,057 33
American Alliance Insurance Co.	5,475 09	2,731 22	3,767 22
American Central Insurance Co.	26,947 14	36,489 72	28,626 39
American Equitable Assurance Co. of N.Y.	11,595 09	4,353 30	4,353 30
American Insurance Co.	16,237 76	8,738 31	8,960 31
Anglo Scottish General Commercial Insurance Co., Ltd.	32,369 66	6,965 21	5,250 19
Atlas Assurance Co., Ltd.	74,085 62	24,643 43	26,541 13
Autocar Fire & Accident Insurance Co., Ltd.	19,722 73	14,115 90	12,309 49
Baloise Fire Insurance Co.	6,533 00	3,457 25	7,912 56
Bankers & Traders' Insurance Co., Ltd.	36,165 82	14,416 62	17,505 32
Beaver Fire Insurance Co.	5,159 21	3,358 81	1,936 98
British America Assurance Co.	53,102 51	31,506 95	32,480 07
British & European Insurance Co., Ltd.	6,117 68	4,141 51	5,926 51
British Colonial Fire Insurance Co.	20,632 58	16,327 18	14,759 79
British Crown Assurance Corporation, Ltd.	60,525 28	36,656 08	37,587 93
British General Insurance Co., Ltd.	11,804 75	7,200 58	6,485 58
British Law Insurance Co., Ltd.	19,605 16	7,101 30	5,847 63
British North Western Fire Insurance Co.	17,287 76	15,780 82	15,423 39
British Oak Insurance Co., Ltd.	24,759 88	5,763 17	5,147 17
British Traders Insurance Co., Ltd.	30,618 75	15,967 84	26,948 84
Caledonian American Insurance Co.	16,308 87	3,664 24	3,089 62
Caledonian Insurance Co.	52,100 38	15,379 84	10,525 36
California Insurance Co.	55,983 13	36,355 53	37,517 01
Canada Accident & Fire Assurance Co.	34,062 12	14,300 68	14,214 84
Canada National Fire Insurance Co.	39,996 61	29,682 36	25,674 55
Canada Security Assurance Co.	15,171 29	9,023 29	9,503 29
Canadian Fire Insurance Co.	41,283 40	14,226 28	6,101 27
Canadian Indemnity Co.	14,043 53	5,470 14	4,778 49
Canadian Surety Co.	*Nil*	*Nil*	*Nil*
Car and General Insurance Corporation, Ltd.	9,211 47	2,244 28	2,374 28
Casualty Company of Canada	3,866 48	11 01	11 01
Central Insurance Co., Ltd.	20,111 57	6,615 00	8,747 55
Century Insurance Co., Ltd.	34,069 16	14,989 28	7,605 22
China Fire Insurance Co., Ltd.	419 19	*Nil*	*Nil*
Citizens Insurance Co. of Missouri	38,197 32	18,874 47	15,175 75
Columbia Insurance Co.	24,894 67	10,317 73	11,192 90
Commercial Union Assurance Co., Ltd.	82,042 97	32,019 68	32,848 04
Commercial Union Fire Insurance Co. of N.Y.	17,131 38	12,799 11	7,632 83
Connecticut Fire Insurance Co.	39,137 51	19,928 62	21,511 01
Continental Insurance Co.	27,788 64	15,068 27	15,064 27
Cornhill Insurance Co., Ltd.	35,401 45	10,771 10	2,049 10
Dominion Fire Insurance Co.	20,988 99	6,303 94	2,681 28
Dominion Gresham Guarantee & Casualty Co.	12,400 74	3,270 10	3,010 59
Dominion of Canada Guarantee & Accident Insurance Co.	12,733 90	487 05	3,982 05
Eagle Star & British Dominions Insurance Co., Ltd.	38,893 09	19,647 38	19,037 61
Employers Liability Assurance Corporation, Ltd.	54,155 54	11,751 15	4,486 00
Ensign Insurance Company	7,961 94	7,585 28	6,175 77
Equitable Fire & Marine Insurance Co.	10,588 89	1,783 62	1,749 60
Essex & Suffolk Equitable Insurance Society, Ltd.	9,911 09	2,714 52	2,582 07
Fidelity Phenix Fire Insurance Co.	47,764 34	17,502 07	17,194 57
Fire Association of Philadelphia	29,405 33	14,097 10	16,761 51
Fire Insurance Company of Canada	43,334 69	23,642 43	21,943 43
Fireman's Fund Insurance Co.	58,572 14	37,216 49	53,300 09
Firemen's Insurance Co.	11,593 88	2,235 75	426 50
First American Fire Insurance Co.	5,692 58	15 00	*Nil*
Franklin Fire Insurance Co. of Philadelphia	11,047 12	4,094 66	4,347 66
General Accident Assurance Co. of Canada	8,864 56	2,525 24	2,525 24
General Accident Fire & Life Assurance Corporation, Ltd.	28,882 73	25,983 78	22,858 74
General Fire Assurance Company of Paris	13,626 68	10,409 66	7,408 66
Girard Fire & Marine Insurance Co.	159 64	13 33	13 33
Glens Falls Insurance Co.	10,607 28	6,474 10	7,497 10
Globe & Rutgers Fire Insurance Co.	36,808 38	14,848 42	27,513 32
Globe Indemnity Co. of Canada	44,051 36	15,526 34	12,591 91
Grain Dealers National Mutual Fire Insurance Co.	.....	.....	.....
Great American Insurance Co.	52,047 41	21,174 34	24,210 34
Guardian Assurance Co., Ltd.	152,080 53	52,734 82	74,863 96
Guardian Insurance Co. of Canada	20,770 99	8,255 36	6,633 36
Carried forward	$2,020,957 21	$ 964,291 27	$ 960,530 12

TABLE I.—NET FIRE INSURANCE PREMIUMS AND NET LOSSES, 1926—*Continued.*

Name of Company.	Net Premiums.	Net Amount of Losses incurred.	Net Amount of Losses paid.
Brought forward	$2,020,957 21	$ 964,291 27	$ 960,530 12
Halifax Fire Insurance Co.	10,688 27	19,418 17	7,275 17
Hardware Dealers Mutual Fire Insurance Co.	13,843 10	4,735 92	4,252 59
Hartford Fire Insurance Co.	124,069 20	64,247 59	99,787 20
Home Insurance Co.	117,874 77	42,498 19	54,584 15
Hudson Bay Insurance Co.	42,425 02	17,907 04	18,698 04
Imperial Assurance Co.	29,201 07	11,337 26	9,145 36
Imperial Insurance Office	37,461 59	6,671 03	6,563 03
Insurance Company of North America	95,788 06	54,357 61	53,495 61
Insurance Co. of the State of Pennsylvania	11,639 96	5,119 07	5,913 69
Laurentian Insurance Co.	1,962 85	68 96	68 96
Law, Union & Rock Insurance Co., Ltd.	37,288 29	16,109 15	17,819 15
Liverpool & London & Globe Insurance Co., Ltd.	157,774 38	76,645 35	65,799 50
Liverpool-Manitoba Assurance Co.	33,189 61	17,698 65	19,900 47
London & Lancashire Guarantee & Accident Co. of Canada	3,470 70	155 58	50 58
London & Lancashire Insurance Co., Ltd.	143,283 13	71,813 06	73,108 06
London & Provincial Marine & General Insurance Co., Ltd.	4,559 05	37 42	37 42
London & Scottish Assurance Corporation, Ltd.	12,315 14	8,464 99	11,044 99
London Assurance Corporation	79,693 59	23,186 94	25,884 44
London Guarantee & Accident Co., Ltd.	26,701 87	5,526 10	5,836 10
London-Canada Insurance Co.	6,793 32	2,630 45	2,406 44
Marine Insurance Co., Ltd.	*Nil*	*Nil*	*Nil*
Mechanics & Traders Insurance Co.	18,830 72	10,524 37	11,469 42
Mercantile Fire Insurance Co.	20,024 69	3,906 40	3,769 40
Merchants Fire Assurance Corporation of N.Y.	70,305 66	28,879 76	24,255 26
Merchants Marine Insurance Co., Ltd.	25,160 54	7,451 67	7,190 67
Millers National Insurance Co.	30,665 57	17,546 48	14,997 48
Mill Owners Mutual Fire Insurance Co. of Iowa	4,500 25	184 42	184 42
Minnesota Implement Mutual Fire Insurance Co.	13,843 10	4,735 92	4,252 59
Motor Union Insurance Co., Ltd.	7,442 19	6,599 47	7,676 90
Mount Royal Assurance Co.	36,631 26	16,544 49	5,392 49
Mutual Fire Insurance Co. of British Columbia	----------	----------	----------
National Ben Franklin Fire Insurance Co.	45,237 15	19,482 85	10,467 59
Nationale Fire Insurance Co. of Paris	49,008 61	22,067 54	20,062 54
National Fire Insurance Co. of Hartford	59,156 38	29,485 34	23,349 51
National Provincial Insurance Co., Ltd.	25,948 46	3,088 92	1,460 92
National Union Fire Insurance Co.	14,483 93	17,143 92	16,623 92
Newark Fire Insurance Co.	22,112 31	7,191 28	10,322 28
New Hampshire Fire Insurance Co.	12,112 24	3,120 71	3,951 40
New Jersey Insurance Co.	25,964 69	30,673 73	21,635 97
New York Underwriters Insurance Co.	3,507 65	1,847 74	1,495 61
Niagara Fire Insurance Co.	30,719 44	6,547 45	11,900 34
North American Accident Insurance Co.	*Nil*	*Nil*	*Nil*
North British & Mercantile Insurance Co., Ltd.	84,584 66	69,468 45	67,685 35
North Empire Fire Insurance Co.	24,290 51	9,876 87	11,433 87
Northern Assurance Co., Ltd.	60,649 53	22,110 99	23,693 99
North River Insurance Co.	8,824 74	4,887 88	2,737 88
Northwestern Mutual Fire Association	112,570 58	17,313 53	17,313 53
Northwestern National Insurance Co.	51,136 99	26,308 98	17,768 41
North West Fire Insurance Co.	12,760 80	3,056 36	2,061 36
Norwich Union Fire Insurance Society, Ltd.	114,918 40	64,705 50	59,712 10
Occidental Fire Insurance Co.	17,847 30	7,831 86	7,953 94
Ocean Accident & Guarantee Corporation, Ltd.	52,895 50	36,958 59	40,523 59
Pacific Coast Fire Insurance Co.	40,314 41	10,044 80	8,415 78
Palatine Insurance Co., Ltd.	37,540 84	7,765 47	12,391 00
Patriotic Assurance Co., Ltd.	21,849 03	7,079 24	7,069 42
Phenix Fire Insurance Co. of Paris	9,972 76	7,121 22	6,148 22
Phoenix Assurance Co., Ltd.	284,316 17	142,589 25	132,567 50
Phoenix Insurance Co.	44,323 37	14,277 29	15,668 41
Providence Washington Insurance Co.	23,430 83	11,165 22	12,278 44
Provincial Insurance Co., Ltd.	33,727 46	22,127 62	12,840 53
Prudential Assurance Co., Ltd.	31,823 88	14,636 63	14,181 80
Quebec Fire Assurance Co.	25,122 35	----------	----------
Queen Insurance Co. of America	71,920 64	27,620 58	21,069 58
Queensland Insurance Co., Ltd.	17,120 84	1,147 43	1,154 93
Railway Passengers Assurance Co.	*Nil*	*Nil*	*Nil*
Reliance Insurance Co. of Canada	8,450 66	1,004 94	2,010 22
Retail Hardware Mutual Fire Insurance Co.	13,843 10	4,735 92	4,252 59
"Rossia" Reinsurance Co., Ltd.	4,865 08	6,165 53	5,264 84
Royal Exchange Assurance	51,858 57	9,735 52	9,327 52
Carried forward	$4,787,594 02	$2,199,677 93	$2,158,184 58

TABLE I.—NET FIRE INSURANCE PREMIUMS AND NET LOSSES, 1926—*Continued.*

Name of Company.	Net Premiums.	Net Amount of Losses incurred.	Net Amount of Losses paid.
Brought forward	$4,787,594 02	$2,199,677 93	$2,158,184 58
Royal Insurance Co., Ltd.	129,632 03	54,518 35	53,019 35
Royal Scottish Insurance Co., Ltd.	14,499 89	3,150 32	2,054 32
St. Paul Fire & Marine Insurance Co.	32,811 63	13,581 43	5,984 81
Scottish Canadian Assurance Corporation	28,612 02	18,794 23	19,323 09
Scottish Metropolitan Assurance Co., Ltd.	29,709 64	8,559 54	11,707 54
Scottish Union & National Insurance Co.	52,248 15	32,924 39	26,171 74
Sea Insurance Co., Ltd.	29,426 76	30,820 32	25,302 32
Security Insurance Co. of New Haven	12,734 45	3,619 60	3,459 60
Springfield Fire & Marine Insurance Co.	52,012 02	14,485 85	20,051 08
State Assurance Co., Ltd.	5,319 22	3 58	3 58
Sterling Fire Insurance Co. of Indiana	3,652 93	1,318 05	3,256 99
Stuyvesant Insurance Co.	16,882 58	18,158 11	10,000 48
Sun Insurance Office	93,269 25	51,783 32	53,814 19
Toronto Casualty, Fire & Marine Insurance Co.	11,594 36	6,135 89	5,982 99
Union Assurance Society, Ltd.	43,659 49	15,557 42	16,022 42
Union Fire Insurance Co.	20,414 66	8,439 16	8,439 16
Union Insurance Society of Canton, Ltd.	51,367 72	810 24	12,779 24
Union Marine Insurance Co., Ltd.	*Nil*	*Nil*	*Nil*
United British Insurance Co., Ltd.	33,990 02	26,750 05	23,367 97
United Mutual Fire Insurance Co.	5,012 17	304 40	36 92
United States Fire Insurance Co.	51,492 17	70,946 79	59,925 29
Westchester Fire Insurance Co.	41,715 71	37,253 59	32,186 59
Western Assurance Co.	52,009 98	33,401 93	32,184 98
World Fire and Marine Insurance Co.	9,379 01	725 47	2,963 84
World Marine & General Insurance Co., Ltd.	14,138 61	889 18	856 18
Yang-tsze Insurance Association, Ltd.	16,396 44	7,961 24	8,746 85
Yorkshire Insurance Co., Ltd.	30,765 77	2,228 67	2,273 67
Total	$5,670,340 79	$2,662,799 05	$2,598,098 40

TABLE II.—FIRE INSURANCE SUMMARY.

Year.	Net Premiums.	Net Amount of Losses incurred.	Net Amount of Losses paid.
1922	$ 4,670,253 65	$ 2,078,201 15	$ 2,062,601 34
1923	5,062,590 48	3,062,348 30	2,556,043 79
1924	5,188,573 63	2,948,339 22	3,497,932 48
1925	5,550,732 19	3,030,900 09	2,719,058 72
1926	5,670,340 79	2,662,799 05	2,598,098 40
Totals	$26,142,490 74	$13,782,587 81	$13,433,734 73

TABLE III.—INVESTMENTS IN BRITISH COLUMBIA OF COMPANIES OTHER THAN LIFE INSURANCE COMPANIES.

(For British Columbia investments of Life Insurance Companies *see* Abstract of Returns of Life Insurance Companies, *post*.)

Name of Company.	Mortgages.	In other Securities.
American Central Insurance Co.	*Nil*	$ 80,400 60
Beaver Fire Insurance Co.	$ 8,558 11	*Nil*
Boiler Inspection & Insurance Co.	*Nil*	19,000 00
British America Assurance Co.	*Nil*	75,000 00*
British Columbia Plate Glass Insurance Co.	*Nil*	5,261 52†
British Crown Assurance Corporation, Ltd.	*Nil*	91,194 66
British Northwestern Fire Insurance Co.	*Nil*	19,500 00*
Caledonian Insurance Co.	401,880 90	143,349 10
Canada Accident & Fire Assurance Co.	*Nil*	12,180 00
Canada National Fire Insurance Co.	134,695 93	12,519 83
Canadian Indemnity Co.	*Nil*	5,000 00
Canadian Surety Co.	*Nil*	40,733 33*
Casualty Company of Canada	*Nil*	11,000 00*
Century Insurance Co., Ltd.	*Nil*	50,333 33*
Continental Casualty Co.	*Nil*	15,000 00*
Dominion Fire Insurance Co.	*Nil*	40,000 00*
Dominion Gresham Guarantee & Casualty Co.	*Nil*	23,000 00*
Dominion of Canada Guarantee & Accident Insurance Co.	60,178 75	137,488 60
Eagle Star & British Dominions Insurance Co.	*Nil*	10,000 00
Ensign Insurance Co.	*Nil*	10,000 00*
Fire Association of Philadelphia	*Nil*	4,623 34
General Accident Assurance Co. of Canada	*Nil*	30,409 21
General Accident Fire & Life Assurance Corporation, Ltd.	*Nil*	30,301 90†
Glens Falls Insurance Co.	*Nil*	28,600 00
Globe Indemnity Co. of Canada	*Nil*	5,000 00
Guardian Insurance Co. of Canada	*Nil*	39,333 33*
Hartford Accident & Indemnity Co.	*Nil*	100,000 00
Hartford Fire Insurance Co.	*Nil*	50,000 00
Home Assurance Co. of Canada	2,000 00	*Nil*
Hudson Bay Insurance Co.	2,400 00	79,032 13†
Imperial Insurance Office	44,307 98	30,434 75
Insurance Co. of State of Pennsylvania	*Nil*	16,881 33‡
London & Lancashire Insurance Co., Ltd.	*Nil*	24,333 33
London Assurance Corporation	*Nil*	101,000 00
London-Canada Insurance Co.	*Nil*	24,500 00
London Guarantee & Accident Co., Ltd.	*Nil*	231,974 51
Loyal Protective Insurance Co.	*Nil*	10,000 00*
Mercantile Fire Insurance Co.	*Nil*	37,000 00*
Merchants Casualty Insurance Co.	*Nil*	10,000 00
Minnesota Implement Mutual Fire Insurance Co.	*Nil*	15,000 00*
National Ben Franklin Fire Insurance Co.	*Nil*	45,220 00*
National Union Fire Insurance Co.	*Nil*	25,000 00
New Jersey Insurance Co.	*Nil*	15,000 00
North British & Mercantile Insurance Co., Ltd.	297,500 00	122,000 00
North Empire Fire Insurance Co.	*Nil*	39,600 00
Northern Assurance Co., Ltd.	*Nil*	25,000 00
North River Insurance Co.	*Nil*	50,000 00*
Northwestern Mutual Fire Association	*Nil*	14,250 00‡
Northwestern National Insurance Co.	*Nil*	54,506 67*
Norwich Union Fire Insurance Society, Ltd.	*Nil*	119,000 00*
Occidental Fire Insurance Co.	*Nil*	4,188 90
Pacific Coast Fire Insurance Co.	280,324 16	296,589 98†
Phoenix Insurance Co.	*Nil*	20,000 00*
Union Insurance Society of Canton, Ltd.	*Nil*	51,739 00
Quebec Fire Assurance Co.	*Nil*	17,130 67‡
Re-Insurance Co. Rossia	*Nil*	5,000 00
Retail Hardware Mutual Fire Insurance Co.	*Nil*	25,000 00*
Royal Plate Glass Insurance Co. of Canada	15,400 00	*Nil*
Western Assurance Co.	*Nil*	10,000 00*
Yorkshire Insurance Co., Ltd.	228,250 00	350,000 00
Totals	$1,475,495 83	$2,958,610 02

* Par value. † Book value. ‡ Market value.

TABLE IV.—ABSTRACT OF THE RETURNS OF LIFE INSURANCE COMPANIES TRANSACTING BUSINESS IN THE PROVINCE OF BRITISH COLUMBIA, 1926.

Name of Company.	Premiums for the Year.	Number of Policies, new and taken up.	Amount of Policies, new and taken up.	Number of Policies in Force at Date.	Net Amount in Force.	Number of Policies become Claims.	Net Amount of Policies become Claims.	Claims paid including Matured Endowments.	Unsettled Claims. Re-sisted.	Unsettled Claims. Not resisted.	Amount invested in British Columbia. On Mortgages.	Amount invested in British Columbia. On other Securities.
1. Aetna Life Insurance Co.	$ 72,138 95	226	$ 895,928 00	704	$ 2,689,606 00	3	$ 11,000 00	$ 13,000 00	*Nil.*	*Nil.*	*Nil.*	‖ $ 325,000 00
2. Canada Life Assurance Co.	543,702 31	617	1,697,593 00	5,450	13,833,976 00	44	105,099 00	108,389 92	*Nil.*	$ 10,438 41	$ 1,368,826 15	2,729,490 73
3. Capital Life Assurance Co.	18,066 75	81	145,500 00	273	484,500 00	....	*Nil.*	*Nil.*	*Nil.*	*Nil.*	29,800 00	† 34,892 96
4. Commercial Union Assurance Co., Ltd.	488 58	1	1,000 00	6	12,031 00	....	*Nil.*	*Nil.*	*Nil.*	*Nil.*	53,252 30	*Nil.*
5. Confederation Life Association	497,002 91	1,269	2,335,598 00	7,523	14,782,738 00	63	134,536 00	143,070 07	*Nil.*	8,064 93	1,517,811 24	* 674,551 72
6. Continental Life Insurance Co.	87,981 75	326	653,637 00	1,604	2,826,146 00	3	3,000 00	3,000 00	*Nil.*	3,153 86	2,000 00	† 256,307 05
7. The Crown Life Insurance Co.	199,347 69	420	1,354,260 00	2,604	7,220,460 00	17	32,652 00	23,416 91	*Nil.*	9,402 00	10,497 25	* 165,000 00
8. The Dominion Life Assurance Co.	194,118 01	....	1,933,581 00	....	5,875,939 00	....	16,500 00	13,235 00	*Nil.*	3,500 00	177,586 83	* 319,793 59
9. Dominion of Canada Guarantee & Accident Insurance Co.	4,399 63	38	86,750 00	68	177,250 00	1	2,000 00	2,000 00	*Nil.*	*Nil.*	6,100 00	*Nil.*
10. Empire Life Insurance Co.	1,344 65	29	61,500 00	29	61,500 00	*Nil.*	*Nil.*	*Nil.*	*Nil.*	*Nil.*	*Nil.*	*Nil.*
11. The Excelsior Life Insurance Co.	125,358 23	....	816,000 00	...	3,396,700 00	....	20,871 00	18,078 60	$ 5,000	*Nil.*	*Nil.*	* 169,086 52
12. The Great West Life Assurance Co.	1,231,252 50	....	5,149,349 00	....	35,786,195 00	....	195,981 00	188,268 02	*Nil.*	17,456 55	2,208,451 82	* 1,147,718 91
13. The Imperial Life Assurance Co.	461,613 93	684	1,564,828 00	6,471	13,572,358 00	17	54,520 00	61,827 85	1,500	6,808 25	48,398 70	† 613,126 43
14. The London & Scottish Assurance Corporation.	31,964 98	48	106,631 00	...	1,106,782 74	14	40,383 74	32,983 24	*Nil.*	3,715 00	*Nil.*	* 169,000 00
15. The London Life Insurance Co.	308,856 98	515	2,295,404 00	3,267	8,680,012 30	13	45,265 00	34,136 85	*Nil.*	4,405 97	*Nil.*	* 1,518,790 16
16. The Manufacturers Life Insurance Co.	394,887 51	1,071	2,384,047 00	4,967	9,811,741 00	27	45,299 00	56,999 73	*Nil.*	4,000 00	2,449 60	* 792,870 71
17. Metropolitan Life Insurance Co. — Ordinary	666,048 64	1,595	3,912,126 00	15,255	20,565,105 00	156	118,824 00	122,880 00	*Nil.*	432 00	125 00	* 2,563,953 43
17. Metropolitan Life Insurance Co. — Industrial	765,458 88	17,005	3,710,702 00	101,302	15,968,141 00	846	98,077 00	91,010 53	*Nil.*	636 71		
18. The Monarch Life Assurance Co.	300,656 32	...	2,044,013 00	....	11,477,961 00	....	37,727 40	47,684 50	*Nil.*	6,134 20	557,357 68	* 194,380 49
19. The Montreal Life Insurance Co.	8,599 89	127	406,250 00	198	493,378 00	2	7,000 00	7,000 00	*Nil.*	*Nil.*	*Nil.*	† 14,743 29
20. Mutual Life & Citizens Assurance Co., Ld	*Nil.*	....	*Nil.*	....	*Nil.*	....	*Nil.*	*Nil.*	...	*Nil.*	*Nil.*	*Nil.*
21. Mutual Life Assurance Co. of Canada	990,752 22	1,442	3,551,404 00	13,782	30,142,024 00	101	165,862 00	144,296 70	*Nil.*	11,535 00	1,545,941 81	* 1,140,767 78
22. The Mutual Life Insurance Co. of New York	119,970 97	81	284,500 00	1,835	4,153,164 00	23	62,729 00	62,719 00	*Nil.*	260 00	*Nil.*	* 842,259 22
23. National Life Assurance Co. of Canada	64,107 95	182	423,966 00	....	2,164,636 00	13	29,208 00	31,208 00	*Nil.*	1,000 00	*Nil.*	† 155,946 95
24. New York Life Insurance Co.	481,795 34	802	1,615,810 00	6,625	14,046,026 00	66	130,991 00	128,062 37	*Nil.*	17,523 00	1,772,750 00	† 103,466 68
25. North American Life Assurance Co.	543,914 50	1,052	2,343,172 00	7,685	15,835,800 00	65	91,486 00	76,779 00	*Nil.*	12,569 03	929,278 28	* 1,078,882 43
26. The Northern Life Assurance Co.	58,750 33	349	437,421 00	1,089	1,555,474 00	3	18,000 00	17,922 22	*Nil.*	10,000 00	*Nil.*	* 158,994 96
27. Norwich Union Life Insurance Society	127 98	....	*Nil.*	....	*Nil.*	....	*Nil.*	*Nil.*	*Nil.*	*Nil.*	46,640 27	* 31,692 80
28. Ontario Equitable Life & Accident Insurance Co.	22,693 71	191	316,345 00	392	825,785 00	1	2,000 00	5,000 00	*Nil.*	1,000 00	192,725 00	113,764 51
29. Phoenix Assurance Co.	7,962 14	1	2,000 00	114	290,604 64	1	3,242 00	3,242 00	*Nil.*	7,242 00	40,500 00	* 109,300 00
30. The Prudential Insurance Co. of America — Ordinary	261,409 94	1,075	1,565,769 00	6,900	8,571,920 00	45	62,000 00	68,824 25	*Nil.*	3,751 00	*Nil.*	*Nil.*
30. The Prudential Insurance Co. of America — Industrial	471,743 97	10,647	3,125,000 00	52,755	10,645,149 00	201	34,153 00	40,091 52	*Nil.*	*Nil.*		
31. Royal Insurance Co., Ltd.	117,250 96	86	282,116 00	1,320	4,355,752 00	7	13,894 96	6,594 96	*Nil.*	7,300 00	*Nil.*	§ 393,584 62
32. The Security Life Insurance Co. of Canada.	2,234 57	25	13,950 00	94	58,450 00	....						
33. Sovereign Life Assurance Co.	88,917 00	237	489,000 00	1,187	2,615,264 00	4	13,500 00	13,365 75	*Nil.*	2,500 00	4,200 00	† 107,869 32
34. Standard Life Assurance Co.**	34,199 00	88	190,625 00	489	1,164,896 00	16	28,229 00	36,016 00	*Nil.*	*Nil.*	125,000 00	* 86,580 37
35. Sun Life Assurance Co. of Canada	1,090,571 46	2,011	4,869,127 00	12,981	‡32,539,896 00	72	165,611 00	125,580 22	*Nil.*	31,250 55	1,482,918 68	† 2,523,938 01
36. The Travelers Insurance Co.	156,211 33	449	1,711,693 00	1,398	7,406,299 00	6	10,000 00	12,000 00	*Nil.*	*Nil.*	*Nil.*	‖ 590,999 99
37. Union Mutual Life Insurance Co.	12,477 14	9	14,124 80	189	402,149 57	4	5,281 24	2,281 24	*Nil.*	1,000 00	*Nil.*	* 46,300 00
38. Western Empire Life Assurance Co.	29,531 60	51	282,003 00	387	1,618,903 00	3	8,000 00	7,000 00	....	1,000 00	25,468 55	30,899 88
39. Western Life Assurance Co.	55,545 90	....	370,640 00	....	2,152,434 00	....	4,500 00	4,500 00	*Nil.*	*Nil.*	9,300 00	† 38,694 80
	$10,523,457 10	.....	$53,443,362 80	.....	308,807,146 25	.....	$1,817,416 34	$1,752,462 95	$6,500	$186,078 46	$12,157,379 16	$19,242,648 31

*Basis of valuation not stated. † Book value. §Including loans on policies. ‖ Par value. ** Year ended November 15th, 1926. ‡ Includes $1,914,855, "Transferred in during the year."

TABLE V.—LIFE INSURANCE SUMMARY.

	1922.	1923.	1924.	1925.	1926.
Premiums for year	$ 6,789,000	$ 7,501,000	$ 8,293,000	$ 9,220,000	$ 10,524,000
Net amount in force	202,809,000	225,660,000	251,945,000	276,281,000	308,808,000
Claims paid	1,635,000	1,691,000	2,206,000	1,913,000	1,753,000

TABLE VI.—AUTOMOBILE INSURANCE PREMIUMS AND LOSSES, 1926.

Name of Company.	Net Premiums written.	Net Premiums earned.	Net Losses incurred.	Ratio Losses inc. to Prem. earned.
Aetna Insurance Co.	$ 1,544 89	$ 1,695 51	$ 64 64	3.81
Agricultural Insurance Co.	59 69	20 69	1 00	4.83
Alliance Assurance Co., Ltd.	4,994 04	5,600 04	4,775 56	85.28
Alliance Insurance Co.	10 00	118 80	26 76	22.48
American Alliance Insurance Co.	65 64	73 70	3 80	5.20
American Automobile Insurance Co.	4,313 32	2,695 55	260 57	9.67
American Central Insurance Co.	*Nil*	*Nil*	*Nil*	*Nil*
The Autocar Fire & Accident Ins. Co.	2,564 61	1,915 87	2,747 69	143.42
British America Assurance Co.	21,030 52	21,257 97	12,650 43	59.51
British Crown Assurance Corporation	3,668 18	3,409 94	2,046 32	60.01
British General Insurance Co., Ltd.	1,585 03	1,192 56	168 80	14.15
British Law Insurance Co.	1,925 21	1,155 12	4 10	0.35
British Traders Insurance Co., Ltd.	39,095 93	27,749 36	11,600 87	41.30
Canada Accident & Fire Assurance Co.	21,340 35	20,411 03	11,432 66	56.01
Canada Security Assurance Co.	877 73	1,266 78	62 89	4.96
Canadian Fire Insurance Co.	5,713 79	6,215 74	1,986 78	21.75
Canadian General Insurance Co.	10,247 16	8,049 72	4,031 96	50.09
Canadian Surety Co.	9,692 83	8,851 42	2,256 88	25.50
Car & General Insurance Corporation	350 04	244 48	12 58	0.51
Casualty Co. of Canada	5,311 13	.....	113 58	.....
Central Insurance Co., Ltd.	1,629 42	1,202 56	1,136 90	94.59
Century Insurance Co., Ltd.	541 79	325 08	*Nil*	.....
China Fire Insurance Co., Ltd.	*Nil*	*Nil*	*Nil*	*Nil*
Columbia Insurance Co.	*Nil*	*Nil*	*Nil*	*Nil*
Commercial Union Assurance Co., Ltd.	8,517 28	7,422 13	2,851 61	38.42
Continental Casualty Co.	3,427 03	3,759 73	976 92	0.26
Continental Insurance Co.	.....	22 10	.....	.....
Cornhill Insurance Co.	10,639 59	8,954 95	3,387 39	37.83
Dominion Fire Insurance Co.	*Nil*	*Nil*	*Nil*	*Nil*
Dominion Gresham Guar. & Cas. Co.	41,306 18	39,558 48	26,120 24	66.03
Dominion of Canada Guar. & Acc. Co.	26,539 23	.....	9,368 83	.....
Eagle Star & British Dominions	5,315 10	5,294 93	1,559 18	29.44
Employers Liability Assurance Corporation	35,547 78	36,023 68	13,370 81	37.11
Equitable Fire & Marine Insurance Co.	18 74	12 56	32 28	257 00
Fidelity Insurance Co. of Canada	2,534 01	3,172 88	332 15	10.46
Fidelity Phenix Fire Insurance Co.	291 05	289 09	43 65	15.10
Fireman's Fund Insurance Co.	1,370 82	1,830 81	552 26	30.17
Franklin Fire Insurance Co.	*Nil*	*Nil*	*Nil*	*Nil*
General Accident Assurance Co.	16,646 84	16,206 09	8,886 86	54.84
General Accident Fire & Life	1,307 01	1,196 97	1,098 30	.....
General Exchange Insurance Corporation	3,069 84	1,736 00	15 50	0.89
Glens Falls Insurance Co.	*Nil*	*Nil*	*Nil*	*Nil*
Globe & Rutgers Fire Insurance Co.	1,030 84	916 63	391 00	42.65
Globe Indemnity Co.	19,875 95	19,263 74	4,799 55	24.92
Great American Insurance Co.	479 50	471 19	33 95	7.20
Guardian Insurance Co. of Canada	41,301 84	41,604 26	18,842 11	45.28
Halifax Fire Insurance Co.	131 61	109 77	214 85	195.76
Hartford Accident & Indemnity Co.	5,857 20	6,649 57	5,199 00	78.19
Hartford Fire Insurance Co.	4,196 53	4,453 54	1,064 97	23.91
Home Insurance Co.	2,607 46	3,490 16	977 20	27.99
Imperial Insurance Office	5,233 88	5,769 64	1,733 26	30.04
Indemnity Insurance Co. of North America	*Nil*	*Nil*	*Nil*	*Nil*
Insurance Co. of North America	11,868 62	15,585 23	17,763 47	113.98
Law, Union & Rock Insurance Co.	9,374 16	8,063 91	2,147 25	26.63
Liverpool & London & Globe Insurance Co.	1,851 95	2,208 79	652 68	29.54
Liverpool-Manitoba Assurance Co.	3,083 23	2,951 36	200 44	6.79
London & Lancashire Guar. & Accident Co.	33,905 18	33,882 21	15,455 67	45.62
London & Lancashire Insurance Co.	2,900 38	3,225 89	5,360 23	166.16
London & Provincial Marine & General Ins. Co.	7,139 78	8,614 19	5,241 30	60.84
London & Scottish Assurance Corporation	*Nil*	*Nil*	*Nil*	*Nil*
London Assurance Corporation	17,627 65	17,213 91	3,983 10	23.13
Carried forward	$ 461,557 56	$ 413,406 31	$ 208,040 78	-----

TABLE VI.—AUTOMOBILE INSURANCE PREMIUMS AND LOSSES, 1926—*Continued.*

Name of Company.	Net Premiums written.	Net Premiums earned.	Net Losses incurred.	Ratio Losses inc. to Prem. earned.
Brought forward	$ 461,557 56	$ 413,406 31	$ 208,040 78	.....
London Guarantee & Accident Co.	30,031 13	28,047 62	8,631 32	30.77
London-Canada Insurance Co.	3,163 32	4,910 18	6,766 82	137.81
Lumbermen's Mutual Casualty Co.	15,792 78	15,859 22	12,305 72	77.59
Marine Insurance Co., Ltd.	316 95	315 11	14 50	4.60
Maryland Casualty Co.	2,026 71	2,148 99	1,385 40	0.64
Merchants Casualty Insurance Co.	80,352 77	70,480 64	38,080 09	54.03
Merchants Marine Insurance Co.	5,468 43	5,438 41	2,090 25	38.43
Motor Union Insurance Co.	21,157 98	21,716 16	4,660 04	21.44
Mount Royal Assurance Co.	39,880 27	32,672 86	17,355 55	53.11
National Fire Insurance Co. of Hartford	*Nil*	*Nil*	*Nil*	*Nil*
Newark Fire Insurance Co.	310 08	460 00	337 75	73.42
New Jersey Insurance Co.	13,832 30	11,555 37	7,477 18	64.20
New York Underwriters Insurance Co.	*Nil*	*Nil*	*Nil*	*Nil*
Niagara Fire Insurance Co.	1,366 59	1,570 47	430 36	27.40
North American Accident Insurance Co.	1,670 44	1,647 33	667 43	40.52
North British and Mercantile Insurance Co., Ltd.	684 12	504 20	170 38	33.89
Northern Assurance Co.	14,242 22	13,510 94	4,685 40	34.68
Northwestern Mutual Fire Association	29,618 43	30,479 45	8,185 82	26.86
Northwestern National Insurance Co.	508 34	294 54	*Nil*	.....
Norwich Union Fire Insurance Society	16,042 02	15,254 47	3,542 94	23.23
Occidental Fire Insurance Co.	7,923 83	8,307 23	5,267 57	63.41
Ocean Accident & Guarantee Corporation	27,969 79	23,117 41	17,775 74	76.89
Pacific Coast Fire Insurance Co.	7,116 42	6,857 16	3,889 19	56.71
Palatine Insurance Co.	6,326 03	5,910 14	1,354 71	22.92
Phoenix Assurance Co., Ltd.	13,828 73	13,828 73	8,637 66	62.47
Phoenix Insurance Co. of Hartford	3 83	22 90	*Nil*	.....
Preferred Accident Insurance Co.	5,663 28	.....	1,643 33	.....
Provincial Insurance Co.	4,696 22	4,054 25	915 51	22.58
Queen Insurance Co.	25,609 12	22,515 66	8,118 81	36.06
Railway Passengers Assurance Co.	37,372 96	34,593 32	11,411 21	32.99
Royal Exchange Assurance	1,505 59	2,327 96	527 02	22.64
Royal Insurance Co.	10,330 60	8,235 44	1,002 00	12.16
St. Paul Fire & Marine Insurance Co.	10,294 59	9,815 72	8,966 94	0.91
Scottish Metropolitan Assurance Co.	2,672 94	2,705 76	692 85	25.61
Scottish Union & National Insurance Co.	10,091 85	9,659 82	11,856 27	122.74
Sun Insurance Office	41,636 29	46,026 90	17,754 60	44.36
Toronto Casualty Fire & Marine	29,537 36	29,802 74	26,145 55	87.72
Travelers Indemnity Co.	6,519 93	6,232 91	4,825 75	77.42
Union Assurance Society	5,263 74	5,182 70	3,952 17	0.76
Union Insurance Society of Canton	25,657 35	18,775 54	10,466 94	55.75
Union Marine Insurance Co.	2,174 20	2,663 33	1,148 63	43.12
United British Insurance Co.	5,192 27	6,143 40	5,959 24	97.00
United States Fidelity & Guaranty Co.	1,119 86	1,143 80	1,955 15	171.00
United States Fire Insurance Co.	7,368 84	5,973 66	6,315 80	105.00
Western Assurance Co.	21,030 52	21,064 90	12,650 42	60.13
World Fire and Marine Insurance Co.	32 00	59 42	47 11	79.28
World Marine & General Insurance Co.	4,042 86	3,504 23	998 81	28.50
Yorkshire Insurance Co.	8,716 84	8,139 43	4,121 40	50.63
Zurich General Accident and Liability Ins. Co.	38,574 97	35,782 55	14,344 24	40.08
Totals	$1,106,295 25	$1,012,719 28	$ 517,572 85	51.10

TABLE VII.—MISCELLANEOUS INSURANCE SUMMARY.

	1922.	1923.	1924.	1925.	1926.
Accident, P.	$318,000	$364,000	$383,000	$424,000	$ 439,000
,, L.	132,000	161,000	178,000	196,000	199,000
Sickness, P.	135,000	148,000	156,000	159,000	175,000
,, L.	87,000	77,000	80,000	95,000	101,000
Liability, P.	26,000	44,000	61,000	67,000	80,000
,, L.	10,000	16,000	8,000	27,000	11,000
Automobile, P.	655,000	624,000	736,000	884,000	1,106,000
,, L.	300,000	223,000	261,000	325,000	518,000
Marine, P.	416,000	443,000	449,000	750,000	607,000
,, L.	217,000	375,000	289,000	420,000	387,000
Other forms, P.	205,000	253,000	251,000	252,000	240,000
,, L.	67,000	65,000	130,000	133,000	54,000

Name of Company.	Accident.		Sickness.		Liability.		Burglary.		Guarantee.		Plate Glass.		Marine.		Credit, Earthquake, Electrical Machinery, Explosion, Forgery, Fraud, Hail, Inland Transportation, Live Stock, Property, Sprinkler Leakage, Steam-boiler, Tornado, and Use and Occupancy. (Indicated by Initial letters.)		Total Premiums.	Total Losses.	Unsettled Claims.	
	Premiums.	Losses.	Premiums.	Losses.	Premiums.	Losses.	Premiums.	Losses.	Premiums.	Losses.	Premiums.	Losses.	Premiums.	Losses.	Premiums.	Losses.			
1. Aetna Insurance Co.													Nil	Nil	I.T. $ 1,130 00 Pr. 1,048 40	$ 132 52 831 90	$ 2,178 40	$ 964 42	$ 7 50	1
2. Agricultural Insurance Co.†																				2
3. Alliance Assurance Co., Ltd.	$ 1,076 36	$ 2,848 69	$ 1,588 08	$ 583 48	$ 872 27	Nil	$ 951 61	$ 142 68	$ 493 59	Nil			$ 3,359 09	Nil			8,341 00	3,574 85	115 00	3
4. Alliance Insurance Co. of Philadelphia, Pa.													2,977 51	$ 5,053 35	U. & O. 990 05	Nil	3,967 56	5,053 35	Nil	4
5. American Central Insurance Co.†																				5
6. American Credit Indemnity Co. of New York															Cr. 11,974 96	447 56	11,974 96	447 56	Nil	6
7. Atlas Assurance Co., Ltd.													467 98	Nil			467 98	Nil	Nil	7
8. The Autocar Fire & Accident Insurance Co., Ltd.	224 90	Nil	206 20	339 04	15 00	Nil					$ 85 69	Nil					531 79	339 04	25 00	8
9. Automobile Insurance Co. of Hartford, Conn.													2,090 35	174 76			2,090 35	174 76	Nil	9
10. The Boiler Inspection & Insurance Co. of Canada															S.B. 8,247 63	Nil	8,247 63	Nil	Nil	10
11. Boston Insurance Co.													Nil	Nil			Nil	Nil	Nil	11
12. British America Assurance Co.	8,951 63	1,797 04	2,441 53	1,179 23	345 17	$ 6 58	974 90	26 62	514 61		532 58	$ 139 30	6,588 31	3,796 11	Pr. 2 36 I.T. 232 79	Nil 2 17	20,583 88	6,947 06	71 50	12
13. The British and Foreign Marine Ins. Co., Ltd.													12,389 34	2,025 55			12,389 34	2,025 55	Nil	13
14. The British Columbia Plate Glass Insurance Co.											27,025 19	9,350 93					27,025 19	9,350 93	Nil	14
15. The British General Insurance Co., Ltd.†																				15
16. British Traders Insurance Co., Ltd.													16,026 62	7,425 95			16,026 62	7,425 95	Nil	16
17. The Canada Accident and Fire Assurance Co.	10,339 54	4,167 70	5,016 99	2,167 07	2,845 65	217 80	5,794 86	570 17	3,393 37	$ 749 41	841 43	167 80					28,231 82	8,039 95	6,905 00	17
18. Canada Security Assurance Co.†																				18
19. Canadian Fire Insurance Co.											147 05	Nil					147 05	Nil	Nil	19
20. Canadian General Insurance Co.											80 28	Nil			L.S. 455 85	Nil	536 13	Nil	150 00	20
21. The Canadian Surety Co.					805 93	Nil	1,892 82	261 72	19,802 98	1,953 37	183 11	45 65			For. 43 15	Nil	22,727 99	2,260 74	1 00	21
22. Car and General Insurance Corporation, Ltd.	504 73			38 40													504 73	38 40	Nil	22
23. The Casualty Co. of Canada	9 00										1,849 90	1,274 82					1,858 90	1,274 82	383 00	23
24. The Century Insurance Co., Ltd.											30 27	Nil					30 27	Nil	Nil	24
25. The China Fire Insurance Co., Ltd.													Nil	Nil			Nil	Nil		25
26. Columbia Insurance Co.†																				26
27. Commercial Union Assurance Co., Ltd.	739 35	333 16	239 43	31 99			44 88	Nil									1,014 66	365 15	133 33	27
28. Connecticut Fire Insurance Co.															Ear. 226 05	Nil	226 05	Nil	Nil	28
29. Continental Casualty Co.	45,830 53	29,734 71	47,697 16	22,739 50	67 05	19 52					612 29	105 85					94,207 03	52,599 58	17,281 86	29
30. Continental Insurance Co.															Pr. 25 00 I.T. 15 00	Nil Nil	40 00	Nil	Nil	30
31. The Cornhill Insurance Co., Ltd.†																				31
32. Dominion Gresham Guarantee & Casualty Co.	9,592 54	6,822 72	16,203 44	14,581 23	5,609 60	532 45	1,529 72	877 04	7,471 63	2,503 02	212 58	64 22					40,619 51	25,380 68	2,321 00	32
33. The Dominion of Canada Guar. & Acc. Ins. Co.	30,077 10	7,266 06	17,170 36	9,200 12	1,031 49	Nil	2,007 54	52 50	1,578 06	659 40	997 00	239 87					52,861 55	17,417 95	10 00	33
34. The Eagle Star & British Dominions Ins. Co., Ltd.													3,397 67		Hail 223 31	Nil	3,620 98	Nil	Nil	34
35. Empire Life Insurance Co.†																				35
36. Employers Liability Assurance Corporation, Ltd.	6,877 33	400 00	2,942 71	60 00	11,701 66	150 00	5,591 65	75 00	2,856 26	3,000 00	173 56	Nil			S.B. 6 96 Ear. 6 00 For. 231 82	Nil Nil Nil	30,387 95	3,685 00	850 00	36
37. The Fidelity & Casualty Co. of New York, N.Y.	70 05	Nil	147 50	Nil	198 75	Nil	1,236 35	187 94	112 50	Nil	250 46	132 74			S.B. 204 38	1,531 58	2,228 99	1,852 26		37
38. Fidelity Insurance Co. of Canada	155 90	938 57	246 18	Nil	817 35	59 00	1,373 33	1,077 84	1,010 33	Nil	27 83	Nil					3,628 92	2,075 41	1,900 00	38
39. Fidelity Phenix Fire Insurance Co.															I.T. 333 48 Exp. 25 00 Pr. 271 00	Nil Nil Nil	629 48	Nil	Nil	39
40. Fireman's Fund Insurance Co.													124,471 26	72,288 61			124,471 26	72,288 61	15,205 28	40
41. Firemen's Insurance Co.†																				41
42. First American Fire Insurance Co.															I.T. 109 75	Nil	109 75	Nil	Nil	42
43. The Franklin Fire Ins. Co. of Philadelphia, Pa.†																				43
44. The General Accident Assurance Co. of Canada	4,213 52 89,574 80	1,242 78 7,043 37	2,088 61	884 27	6,751 00	1,575 69	2,811 50	754 28	4,503 44	Nil	1,189 80	270 96			S.B. 2,203 32 E.M. 1,976 02	63 50 Nil	35,312 01	11,834 85	3,291 75	44
45. General Accident Fire & Life Assur. Corpn., Ltd.	1,015 33	477 30			145 00	Nil	217 12	156 28			270 08	36 00					1,647 53	669 58	Nil	45
46. Glens Falls Insurance Co.															I.T. 114 06	2,296 32	114 06	2,296 32	Nil	46
47. Globe & Rutgers Fire Insurance Co.													69,142 47	74,966 05	Ear. 175 00 I.T. 70 10	Nil 143 89	69,387 57	75,109 94	Nil	47
48. The Globe Indemnity Co. of Canada	12,470 17	4,117 05	10,116 85	3,619 22	2,545 79	164 45	1,292 69	Nil	2,605 33	2,279 69	963 32	305 97					29,094 15	10,477 38	4,123 00	48
49. Great American Insurance Co.													4,294 12	3,541 56			4,294 12	3,541 56	114 00	49
50. The Guarantee Co. of North America									6,168 74	1,050 00							6,168 74	1,050 00	Nil	50
51. The Guardian Insurance Co. of Canada	771 91	Nil	199 10	79 64	619 15	351 50	1,881 96	8 00	614 19	Nil	115 62	41 00			I.T. 3 00	Nil	4,204 93	680 14	1,500 00	51
52. Halifax Fire Insurance Co.†																				52
53. Hartford Accident and Indemnity Co.	267 95	10,020 00	89 10	Nil	3,396 64	261 45	385 27	10 50	135 00	Nil	1,136 39	504 18					5,410 35	10,796 13	200 00	53
54. Hartford Fire Insurance Co.															I.T. 15 00 Wea 273 54	Nil Nil	288 54	Nil	Nil	54
55. Home Assurance Co. of Canada	19,574 28	6,009 26															19,574 28	6,009 26	636 66	55
56. Home Insurance Co.															Wea. 10 30 I.T. 90 88	153 50 Nil	101 18	153 50	Nil	56
57. The Imperial Insurance Office	81 51	Nil	18 27	Nil	6 00	Nil			100 00	Nil	12 48	43 20					218 26	43 29	Nil	57
58. Indemnity Insurance Co. of North America†																				58
59. Insurance Co. of North America													63,622 15	61,540 07	Ear. 330 00 U. & O. 4,336 58 Spr. L. 430 65	Nil Nil Nil	68,719 38	61,540 07	129,000 00	59
60. The Insurance Co. of the State of Pennsylvania													Nil	Nil			Nil	Nil	Nil	60
61. Law, Union & Rock Insurance Co., Ltd.	1,366 20	451 40	645 04	206 68	423 94	6 75	635 94	Nil	361 58	Nil	227 42	610 89					3,660 12	1,275 72	180 00	61
62. Liverpool & London & Globe Insurance Co., Ltd.	2,497 42	874 99	1,881 92	Nil	246 42	57 50	97 22	Nil	269 79	Nil							4,992 77	932 49	302 00	62
63. The Liverpool-Manitoba Assurance Co.†																				63
64. The London & Lancashire Guar. & Acc. Co. of Can.	6,978 79	2,452 82	4,595 02	1,325 71	2,759 08	724 00	1,217 15	Nil	2,361 74	987 94	1,530 15	539 27					19,441 93	6,029 74	2,157 00	64
65. The London & Lancashire Insurance Co., Ltd.†																				65
66. London & Provincial Mar. & General Ins. Co., Ltd.	35 00	176 43			105 00	Nil	119 18	340 00	112 50	Nil							371 68	516 43	Nil	66
67. The London & Scottish Assur. Corporation, Ltd.	25 34	Nil					70	Nil									26 04	Nil	Nil	67
68. London Assurance Corporation													20,678 01	1,843 92			20,678 01	1,843 92	Nil	68
69. London Guarantee & Accident Co., Ltd.	*2,839 05 18,303 12	542 16 11,163 16	3,869 90	1,752 22	8,703 91	1,370 28	884 64	86 00	2,596 48	2,125 70	56 71	Nil					37,253 81	17,039 52	9,595 00	69
70. Loyal Protective Insurance Co.	*28,735 09	16,323 81															28,735 09	16,323 81	1,856 00	70
71. Lumbermen's Mutual Casualty Co.†																				71
72. The Marine Insurance Co., Ltd.															I.T. 805 11	Nil	805 11	Nil	Nil	72
73. Maritime Insurance Co., Ltd.													273 64	Nil			273 64	Nil	Nil	73
74. Maryland Casualty Co.	1,272 91	542 14	378 93	Nil	511 52	Nil	2,226 79	Nil	2,838 06	Nil	508 70	151 50			S.B. 241 54 For. 72 62 Spr. L. 446 67	Nil Nil Nil	8,497 71	693 64	338 90	74
75. Merchants Casualty Insurance Co.	61,012 96	24,829 39															61,012 96	24,829 39	4,609 29	75
76. Metropolitan Life Insurance Co.†																				76
77. The Motor Union Insurance Co., Ltd.	1,135 40	70 35									120 25	23 50					1,255 65	93 85	Nil	77
78. The Mount Royal Assurance Co.											1,586 14	694 58					1,586 14	694 58	Nil	78
79. National Fire Insurance Co. of Hartford†																				79
80. National Provincial Insurance Co., Ltd.											871 35	409 54					871 35	409 54	35 70	80
81. National Surety Co.							594 16	494 50	6,090 19	628 04					Fraud 430 05 For. 225 40 Cr. 555 78	224 41 80 88 Nil	7,895 58	1,427 83	561 00	81
82. The Newark Fire Insurance Co.													Nil	Nil			Nil	Nil	Nil	82
83. New Hampshire Fire Insurance Co.†															Nil	Nil	Nil	Nil	Nil	83
84. New Jersey Insurance Co.													Nil	Nil	I.T. 37 66	Nil	37 66	Nil		84
85. New York Underwriters Insurance Co.†																				85
86. Niagara Fire Insurance Co.													1,006 59	4,118 65			1,006 59	4,118 65	2,022 00	86
87. The North American Accident Insurance Co.	1,642 66	2,210 01	352 42	68 39	338 15	Nil	101 78	12 00			1,512 24	474 99					3,947 25	2,765 30	415 00	87
88. North British & Mercantile Insurance Co., Ltd					45 00	Nil			20 00	Nil			56,782 95	23,121 52			56,847 95	23,121 52	9,013 68	88
89. Northern Assurance Co., Ltd.	1,293 03	143 87	1,137 94	1,119 38	1,829 98	193 78	876 54	440 25	612 72	Nil	533 90	270 59	2,939 75	650 54			9,243 86	2,818 41	1,336 33	89
90. The North River Insurance Co.†																				90
91. Norwich Union Fire Insurance Society, Ltd.	5,033 59	780 14	3,302 46	1,629 52	1,923 15	595 03	648 26	185 00	440 08	Nil	1,543 46	413 06			Pr. 54	Nil	13,491 54	3,602 75	2,796 00	91
92. Occidental Fire Insurance Co.†																				92
93. The Ocean Accident & Guarantee Corpn., Ltd.	13,627 24	4,688 07	2,907 75	1,571 95	1,269 06	Nil	1,274 50	113 00	618 92	Nil	2,300 35	985 97			S.B. 793 55	Nil	22,787 37	7,358 99	6,925 00	93
94. Ocean Marine Insurance Co., Ltd.													694 29	1,060 99			694 76	1,060 99		94
95. Phoenix Assurance Co., Ltd.													Nil	Nil			Nil	Nil	Nil	95
96. The Phoenix Insurance Co.													Nil	460 17	Spr. L. 19 88	Nil	19 88	460 17	85 71	96
97. The Preferred Acc. Ins. Co. of New York, N.Y.†																				97
98. The Protective Association of Canada	32,512 50	19,005 51															32,512 50	19,005 51	2,321 68	98
99. Provincial Insurance Co., Ltd.†																				99
100. The Prudential Insurance Co. of America†																				100
101. Queen Insurance Co. of America													54,304 86	12,701 60	I.T. 134 96	Nil	54,439 82	12,701 60	3,388 10	101
102. Queensland Insurance Co., Ltd.													7,634 69	6,878 96			7,634 69	6,878 96	Nil	102
103. Railway Passengers Assurance Co	6,291 66	1,740 21	3,380 75	2,118 90	1,702 10	608 00			1,187 73	15 05	1,217 22	563 79			I.T. 79 20	Nil	16,858 66	5,045 95	525 00	103
104. Reliance Marine Insurance Co., Ltd.																				104
105. Royal Exchange Assurance	667 80	72 75	51 00	124 64			11 00	Nil	407 18	Nil							1,136 98	197 39	Nil	105
106. Royal Insurance Co., Ltd.	68 25	Nil	90 00	Nil	25 00	Nil	142 51	Nil	170 61	Nil			482 97	Nil	S.B. 12 63	Nil	991 37	Nil	Nil	106
107. Royal Plate Glass Insurance Co. of Canada											1,322 22	1,728 61					1,322 22	1,728 61	Nil	107
108. St. Paul Fire & Marine Insurance Co.													10,937 21	3,954 02	I.T. 1,855 53	456 18	12,792 74	4,197 20	1,166 00	108
109. Scottish Metropolitan Assurance Co., Ltd.	1,757 85	510 53	1,636 94	878 94	293 35	122 22			7 80	Nil	50 55	Nil	8,499 50	5,717 10	I.T. 356 20	4 33	12,601 99	7,233 12	2,654 00	109
110. Scottish Union & National Insurance Co.†																				110
111. Standard Marine Insurance Co., Ltd.													15,136 73	1883 39	I.T. 397 09	348 00	15,533 82	5,231 39	15,433 96	111
112. Sun Insurance Office	671 77	81 06	439 65	592 57	252 94	Nil					284 35	Nil					1,648 71	673 63	363 50	112
113. Toronto Casualty, Fire & Marine Insurance Co.	50 40	61 66	88 84	86 66	1,933 55	105 50	12 00	Nil	18 00	35 45	934 98	401 14			I.T. 9 75	Nil	3,047 52	689 41	82 39	113
114. The Travelers Indemnity Co.							4,652 74	529 59			344 88	28 96			S.B. 528 85	99 33	5,526 47	657 88	272 95	114
115. The Travelers Insurance Co.	34,869 03	8,798 07	25,242 53	23,266 44	1,948 41	Nil											62,059 97	32,064 51	5,638 71	115
116. Union Assurance Society, Ltd.					5,068 79	1,592 49	269 75	Nil			3 95	21 60					5,342 40	1,614 09	Nil	116
117. Union Insurance Society of Canton, Ltd.	8,316 99	4,497 92	10,396 71	6,101 66	3,321 93	123 00							19,192 95†	10 943 97			41,228 58	21,666 55	1,928 00	117
118. The Union Marine Insurance Co., Ltd.†																				118
119. United Mutual Fire Insurance Co.†.																				119
120. United States Fidelity & Guaranty Co.	903 50	413 55	602 33	297 85	1,615 06	1,307 52	2,966 05	3,267 86	21,080 78	Nil	796 89	509 84			For. 266 92	53 83	31,231 53	5,991 45	7,106 74	120
121. United States Fire Insurance Co.															Ter. 559 27	31 95	559 27	31 95	Nil	121
122. United States Merchants & Shippers Ins. Co													38,608 76	34,724 06			38,608 76	34,724 06	Nil	122
123. Westchester Fire Insurance Co.													1,345 39	151 44			1,345 39	151 44	35 00	123
124. Western Assurance Co.	8,951 61	1,797 03	2,441 53	1,179 22	345 17	6 57	1,153 21	26 63	514 60	Nil	532 56	139 31	13,256 63	4,014 25	I.T. 465 59	4 33	27,660 90	7,167 34	11,640 00	124
125. The Western Casualty Co.	27,500 51	11,480 99															27,300 51	11,480 99	3,760 00	125
126. The World Fire & Marine Insurance Co.															I.T. 367 50	Nil	367 50	Nil	Nil	126
127. The World Marine & General Ins. Co., Ltd.	144 18	Nil	78 54	129 96	617 01	160 73	558 32	440 25	37 50	Nil	68 56	Nil	8,428 69	453 72			2,032 80	5,263 73	67 50	127
128. The Yang-tsze Insurance Association, Ltd.													37,814 95	36,902 31			37,814 95	36,902 31		128
129. The Yorkshire Insurance Co., Ltd.	7,486 89	1,864 57	1,578 83	3,187 32	484 76	160 00	813 93	275 49	813 80	Nil	487 23	246 04			L.S. 37 87	Nil	14,703 31	6,033 62	840 00	129
130. Zurich General Accident & Liability Ins. Co., Ltd.	125 00	Nil			665 59	Nil					22 89	7 25					813 48	7 25	Nil	130
Totals	$158,923 17	$198,791 00	$171,509 54	$101,432 11	$ 80,142 26	$ 10,731 81	$ 17,242 57	$ 10,411 34	$ 81,920 09	$ 15,987 07	$ 56,628 86	$ 20,933 92	$806,815 23	$387,171 69		$ 11,530 92 $ 6,903 18	$1,540,743 11	$ 751,309 78	$243,716 84	

* Accident and sickness. † No business transacted.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

1,925 827 8949

PROVINCE OF BRITISH COLUMBIA

SIXTH ANNUAL REPORT

OF THE BUSINESS DONE IN
PURSUANCE OF THE

SUPERANNUATION ACT

FOR THE

YEAR ENDED MARCH 31ST

1927

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

To His Honour ROBERT RANDOLPH BRUCE,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned respectfully submits the Report of the business done in pursuance of the "Superannuation Act" during the fiscal year 1926–27.

WILLIAM SLOAN,
Provincial Secretary.

Provincial Secretary's Office,
Victoria, B.C.

The Honourable William Sloan,

Provincial Secretary, Victoria, B.C.

SIR,—I have the honour to lay before you Report of the business done in pursuance of the "Superannuation Act" during the fiscal year 1926–27.

I have the honour to be,
Sir,
Your obedient servant,

A. H. COX,
Civil Service Commissioner.

SUPERANNUATION REPORT, 1926-27.

Report of the business done in pursuance of the "Superannuation Act" during the fiscal year 1926–27.

Section 5.—Contributions were made by the employees of the British Columbia Government of $126,865.82; by the employees of the City of Duncan of $187.80.

Section 6.—On April 1st, 1926, 256 persons were contributing more than 4 per cent. During the year twenty-five additional persons were granted permission to make increased contributions, while six of those making increased contributions were superannuated, two died, and three others left the Service, leaving 270 making increased contributions on March 31st, 1927.

Section 7.—Contributions were made by the Government and by the City of Duncan of a like amount to the contributions of their employees respectively.

Section 9.—The number of the contributors taking advantage of this section to make voluntary contributions during the year was unchanged from the previous year.

Section 11.—Interest was credited at the rate of 5 per cent. per annum on September 30th and March 31st on the credit balances of the previous April 1st and October 1st respectively.

Section 12.—A statement of all moneys received and paid out under the provisions of this Act and the assets and liabilities appertaining to the granting of superannuation allowances under its provisions is given in Schedule No. 1.

Section 13.—(1.) (*a.*) The sum of $28,327.91 was refunded under sections 18, 19, and 38 to employees of the British Columbia Government. A like amount was transferred from the British Columbia Government Employer's Account to the Special Reserve Fund.

(3.) The debit balance of the account of the British Columbia Government in the Special Reserve Fund amounted to $199,411.51 on March 31st, 1927. Interest at the rate of 5 per cent. per annum was charged on the debit balance of this account.

Section 14.—Superannuation allowances were granted to ten persons, as per Schedule No. 2.

Section 18.—Ten contributors died during the fiscal year and refunds were made to their legal representatives.

Section 19.—One hundred and forty contributors, on leaving the Government Service, secured refunds of the amount standing at their credit. Also two employees of the City of Duncan, on leaving the service of the municipality, secured a refund of the amount at their credit in the fund.

Section 20.—Two of the contributors who left the Service had made voluntary contributions under section 9, and secured a refund of these special contributions.

Section 38.—Default having been made by one of the contributors, the amount in default was paid to the Minister of Finance.

SCHEDULES.

SCHEDULE No. 1.

Summary of Receipts and Expenditures.

Receipts.

Cash in Treasury, April 1st, 1926	$1,313,802.74
Contributions by British Columbia Government employees	126,865.82
" " " employer	126,865.82
" " " Special Reserve	28,207.42
" City of Duncan employees	187.80
" " employer	187.80
" " Special Reserve	27.60
Voluntary contributions, section 9	1,520.80
Interest paid by British Columbia Government	67,642.71
	$1,665,308.51

Expenditures.

Refunds, section 18	$ 4,610.26
" " 19	23,535.15
" " 20	57.24
" " 38	182.50
Superannuation allowances	47,741.49
Cash in Treasury, April 1st, 1927	1,589,181.87
	$1,665,308.51

Balance-sheet as at March 31st, 1927.

Assets.

Cash in Treasury		$1,381,211.47
Cash in Treasury	$207,970.40	
British Columbia Government Special Reserve (section 13 (1) (*a*) and (*b*))	199,411.51	
		407,381.91
		$1,788,593.38

Liabilities.

British Columbia Government employees	$688,036.77	
" " employer	688,036.77	
City of Duncan employees	882.38	
" employer	882.38	
" Special Reserve	388.00	
Special contributions	2,985.17	
Total, Current Accounts		$1,381,211.47
Present value of allowances in force March 31st, 1927	$403,106.84	
Balance, being difference between value of allowances in force March 31st, 1927, and amount at credit of Superannuation Allowance Account	4,275.07	
		407,381.91
		$1,788,593.38

PRESENT VALUE OF SUPERANNUATION ALLOWANCES IN FORCE MARCH 31ST, 1927.

	Allowance per Month.	Present Value.
Allardyce, T.	$ 46.55	$ 4,122.44
Almond, S. R.	73.33	6,238.92
Anderson, G.	15.00	1,695.60
Armstrong, J. F.	125.56	7,111.72
Arthur, Dr. E. C.	15.00	1,328.40
Baird, Mrs. Flora I.	45.50	8,252.80
Bamford, T.	127.30	13,091.53
Beckwith, Mrs. E. L.	22.45	2,497.34
Bowman, T. M.	47.37	5,388.81
Briggs, A. J.	37.25	2,108.10
Brooke, H. C. B.	64.60	9,105.65
Brown, J. R.	82.50	7,019.10
Bunting, J. F. B.	1.80	191.59
Burgess, T. A.	15.25	2,291.16
Calbrick, Thomas F.	15.66	1,781.48
Callaghan, John	18.40	1,629.50
Cambridge, J. J.	115.00	13,510.20
Campbell, C. S.	104.50	11,122.98
Carne, F.	15.00	1,328.40
Carter, W. O.	44.50	7,315.80
Clark, J. R.	21.00	2,230.98
Clint, James	45.86	3,901.77
Corfield, W. F.	14.60	1,869.38
Cox, Dennis G.	58.06	5,761.87
Creighton, J. W.	42.80	3,641.42
Cullin, W. H.	98.75	9,443.95
Curtis, Mrs. A. M.	20.20	2,802.14
Cummings, Mrs. G.	46.20	1,410.34
Davies, A. A.	31.55	3,358.18
Davies, P. J.	15.00	1,378.80
Delbridge, T.	15.00	1,380.60
Devlin, H.	37.65	4,295.33
Devonshire, G.	5.60	422.46
Dunbrack, L. G.	43.00	4,418.86
Dunlop, J.	28.85	2,357.25
Evans, A. M.	20.20	1,522.27
Fawcett, Miss C. M.	27.80	4,149.99
Flett, James	9.20	815.42
Garrett, A.	50.80	4,858.51
Goepel, W. J.	187.29	16,586.40
Granger, R. T. F.	125.00	11,955.00
Hall, John	44.15	3,756.28
Hanson, R. E.	28.60	2,532.82
Hargie, James	24.90	2,599.56
Henderson, C. C.	15.40	1,583.74
Hepburn, W.	24.00	2,208.96
Hewton, Wm.	25.00	1,416.00
Hodgins, A. E.	40.00	4,257.60
Hodson, J. H.	22.90	1,948.33
Hood, A.	99.00	12,354.06
Hunter, H.	91.85	10,392.30
Jones, G. B.	51.75	4,229.01
Lloyd, M. B.	21.65	1,992.67
Carried forward	$2,466.13	$244,963.77

PRESENT VALUATION OF SUPERANNUATION ALLOWANCES—*Continued.*

	Allowance per Month.	Present Value.
Brought forward	$2,466.13	$244,963.77
Mayhew, J. E.	14.35	1,403.10
Mogee, A.	15.00	1,029.60
Morley, H. A. S.	128.66	7,657.84
Morrison, J. W.	38.30	3,663.01
Morshead, F.	13.65	1,552.82
Moseley, L.	15.00	1,047.60
Moth, Mrs. Harry (T. Henry)	20.35	1,819.30
McCabe, M. H.	15.00	1,328.40
McGregor, Mrs. A. E.	98.21	6,044.48
McKercher, A.	28.60	2,433.29
McLean, Mrs. M.	52.00	7,020.00
McPhee, J.	22.65	2,582.10
Norris, L.	118.00	12,135.12
Peers, Joseph	8.70	570.02
Pelly, J.	15.00	1,730.89
Philips, F. M.	31.40	3,342.22
Pottinger, James	107.10	7,017.19
Preston, Mrs. M. J.	15.70	2,234.44
Price, A. H.	22.85	1,428.58
Pye, W. T.	15.00	1,380.60
Pyke, J. A.	22.75	2,014.74
Rant, W. J.	56.90	4,083.14
Robertson, W. C.	19.35	1,328.18
Robertson, W. F.	166.70	16,543.31
Seymour, E. J.	17.25	1,773.99
Shakespeare, F. N. E.	71.90	7,653.03
Shaw, E. J. C.	10.25	1,279.20
Smith, C. F.	15.65	1,896.01
Stanton, Mrs. A. J.	77.96	11,095.27
Stenson, R. J.	41.10	7,674.19
Sutton, J.	19.40	2,088.22
Tolmie, R. F.	190.65	18,233.77
Webb, C. N.	20.00	2,349.60
Whitfield, G.	14.70	1,607.00
Williams, R. T.	55.90	3,494.87
Wilmot, H. F.	63.00	6,482.95
Young, R. H.	15.00	1,125.00
	$4,140.11	$403,106.84

SCHEDULE No. 2.

SUPERANNUATION ALLOWANCES GRANTED BETWEEN APRIL 1ST, 1926, AND MARCH 31ST, 1927.

Date Effective.	O.C. No.	Name.	Position, Office, and Department.	Plan.	Amount per Month.
1–5–26	476/26	Brooke, H. C. B.	Clerk, Vancouver, Finance	Joint life and last survivor	$64.60
1–6–26	505/26	Davies, A. A.	Clerk, Vancouver, Finance	Single life	31.55
1–7–26	784/26	Beckwith, W. S.	Clerk, Victoria, Lands	Joint life and last survivor	22.45
1–8–26	853/26	Curtis, J. E.	Janitor, Parliament Buildings, Public Works	Joint life and last survivor	20.20
17–9–26	1290/26	Hood, A.	Chief Clerk and Accountant, Public Works	Single life	99.00
1–11–26	1182/26	Hunter, H.	Gold Commissioner, Princeton, Finance	Single life and joint life and last survivor	91.85
1–1–27	122/27	Dunbrack, L. G.	Guard, Oakalla Prison Farm, Attorney-General	Single life	43.00
4–3–27	305/27	Devlin, H.	Inspector, Mines	Five years	37.65
1–4–27	276/27	Allardyce, T.	Special Collector, G.A., Vancouver, Finance	Single life	46.55
1–4–27	454/27	Dunlop, J.	Mining Recorder, Lillooet, Finance	Single life	28.85

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

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PROVINCE OF BRITISH COLUMBIA

THIRTY-FIRST REPORT

OF THE

PROVINCIAL BOARD OF HEALTH

INCLUDING

SIXTEENTH REPORT OF MEDICAL INSPECTION OF SCHOOLS, YEAR ENDED JUNE 30TH, 1927, AND THE FIFTY-FIFTH REPORT OF VITAL STATISTICS DEPARTMENT, YEAR ENDED DECEMBER 31ST, 1926

PRINTED BY
AUTHORITY OF THE LEGISLATIVE ASSEMBLY.

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

PROVINCIAL BOARD OF HEALTH,

VICTORIA, B.C., November 30th, 1927.

To His Honour ROBERT RANDOLPH BRUCE,
Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to present the Report of the Provincial Board of Health for the year ended June 30th, 1927.

WILLIAM SLOAN,
Provincial Secretary.

REPORT *of the* PROVINCIAL BOARD OF HEALTH.

PROVINCIAL BOARD OF HEALTH,
VICTORIA, B.C., November 30th, 1927.

The Honourable William Sloan,
Provincial Secretary, Victoria, B.C.

SIR,—I have the honour to submit the Thirty-first Annual Report of the Provincial Board of Health for the year ended June 30th, 1927.

Ordinarily, our Report appears in August of the current year, but owing to our arrangement with Ottawa in respect to the vital statistics it has been delayed pending receipt of the tables from the Census Bureau.

In 1918 I suggested to the Honourable the Minister a change in the date of the publication of our Report, asking that it be published in midsummer in order to coincide with the completion of the school-year, and also to enable us to present a report on the Vital Statistics Branch a sufficient length of time from the completion of the previous year to enable us to return a complete report. This has been carried out.

In the meantime, arrangements which had been pending with the Census Bureau at Ottawa have been given effect to, and all the Provinces make their complete Vital Statistics Report to Ottawa, who tabulate them, but we find now that Ottawa is not able to give us the figures until the end of the present year, and we are just in receipt of these.

This delays our general Report, and I beg leave to suggest that we revert to our former procedure; that is, for the Annual Report of the Department to appear in midsummer at the end of the school-year, and that the Vital Statistics Report be issued as a separate report and be published on receipt of the full tables at the end of the year. This will enable us to present both Reports to the Legislature in January of each year as is provided for under present laws. This procedure will coincide with the other Provinces in regard to the issuance of the Vital Statistics Report, and enables comparison to be made as between the Provinces, and also enables the Census Department to publish a complete report coincident with the publication of the Provincial reports.

The Annual Report of the Provincial Board of Health is primarily engaged in reporting the statistics of communicable diseases which come within the purview of the Department, and, by comparing the number of cases as reported from year to year, gauge the results of the work of the Board. This is the general conception that the public has of our work, but as we progress we have endeavoured to show the public that the number of cases of infectious diseases reported is more a criticism of, not the Department, but of the conduct of the community itself in regard to their non-observance of the law of the land.

Our whole effort has been directed along the lines of the awakening, in the public conscience, of a sense of their responsibility, and that the results from the enforcement of the health laws can only be brought about by co-operation on the part of the public. Governments may make laws, but they can only keep a step or two ahead of what the public desires, and to get at the desires of the public necessitates a long-continued propaganda in an effort to educate them to their responsibilities. I am pleased to say that during the past few years there has been a remarkable awakening of the public conscience in this matter. They are beginning to realize what the individual as regards his relation to the community means, and as regards the efforts he must make individually in the prevention of disease by attention to personal hygiene, the education of himself and others in the idea of the prevention of disease as distinct from its cause. The inculcation of this idea has been our aim, and our efforts have been to create a broader outlook by the health-work as carried on by the Government.

Formerly it was the highest ambition of public-health workers to show each year a diminished morbidity and mortality rate from certain named diseases. If the Public Health Officer could show that in a brief period of his incumbency he had cut the typhoid death-rate down to one-fifth of its former proportions and had a steadily diminishing rate for scarlet fever or diphtheria, he felt that he had done a great deal. But within the past few years we have had a higher ambition. We have felt that we must deal with more than the negative side of health, and that it was most distinctly within the province of a Health Officer to put forth every effort to raise the vitality of every human unit in his community to the highest point of efficiency. He must no longer be satisfied with the knowledge that from the result of his efforts a number of individuals have survived who might have died from some preventable disease, but he must also feel that he must lay a foundation for the robust citizens of to-morrow,

and so our ideals have advanced, taking in not only the previous field of sanitation, but also that of personal hygiene.

How to reach the individual, however, has been the problem. Health Officers could not personally supervise the daily life of each individual in the community, and he recognizes, therefore, the necessity for educational measures, directed both to the end of securing better understanding, and hence better support to the Health Department, and also to so educate the individual as to furnish him with the knowledge of how to promote his individual health and with the incentive to put that knowledge into effect.

That we are accomplishing our purpose is largely due to the fact that a sufficient number of the citizens have become thoroughly interested, and through them, as individuals, organizations have been reached, and public-health work in British Columbia is able to show milestones of progress from year to year.

Our Public Health Nursing Service is probably the best example of the progress that we are making in regard to the education of the public.

The Department of Public Health in the University is providing a course for the training of our Public Health Nurses. This is supplemented by a training in our leading Public Health Centres of the actual work as carried out in our different districts, and it is due to the establishment of these nurses that we are able to report still further advances during the past year.

Our ambition has been to create self-contained health units in the different municipalities under a full-time Medical Health Officer and with a sufficient number of nurses to give effect to the health laws.

There have been, in our two largest cities, full-time Medical Health Officers for some years, but in all of the rest of the Province part-time officers carried on the work. These officers were selected from amongst the local practitioners, and while the Department acknowledges its indebtedness to these men and to their valuable services in time of epidemics, yet it was impossible to embark upon an educational health-work under the supervision of men who were themselves busy practitioners, and our object has been to convince the people of the value of giving specially trained people the special work of educating them to realize that, within natural limits, any community can determine its own death-rate, and also to realize that "prevention is better far than cure."

We have established, during the past year, three full-time health units. It is a difficult matter to convince people that they are deriving benefits following certain costs if it cannot be demonstrated to them that there is not an actual monetary return, and in this materialistic age a suggestion to increase taxes without such a monetary return receives very scant attention. But the work carried on by the nurses, the results we have achieved in our schools, the better control of epidemics, all has had its effect, and led to the adoption by three of the districts of full-time men, and I am pleased to record that the results in these districts, in even such a short time, have convinced the people.

The men whom we have placed in charge are men who have specialized in health-work; they went into the district with a definite programme and have carried it out, with the result that adjoining districts are making inquiries as to how it was done and what it costs.

In inaugurating the first three units, we are indebted to the Rockefeller International Health Board for financial assistance, which is granted for a limited time, but it is the fact that this has been granted that has enabled us to get the people to make the beginning. By the time that this grant is withdrawn these districts will, as they express themselves, willingly go on with the work.

The plan carried out is a full health programme, beginning with prenatal work, followed by infant-welfare, pre-school, then school, until the child leaves the school. This is the basis of the work, and using this as the introduction into the home, the establishment of classes amongst the older people, we are able to bring home to them the real purpose of a co-ordinated plan; that is, the elimination of disease by study, research, and co-operative effort, based upon our knowledge that common contagious diseases are spread chiefly by the direct transfer of excretions from person to person.

The establishment of unified health service is the application of the knowledge gathered as a result of investigations by many men in all countries, and its justification is probably best expressed by quoting from Dr. Charles V. Chapin's address on "Science and Public Health" before the American Public Health Association:—

"The science which can point to its achievements against smallpox, malaria, yellow fever, diphtheria, typhoid and typhus fevers, tuberculosis, and a score of other diseases, as well as

to a rapid lengthening of human life, and especially to the saving of vast numbers of infants from early death, need not be ashamed to acknowledge that some experiments have failed; neither should it hesitate to admit that we are still merely picking up pebbles on the shore of the sea of knowledge, and that what is not known about maintaining and perfecting the health of mankind is far greater than what is known. The opportunities for discovery are as great as before the days of Harvey, Pasteur, and Lister."

We have endeavoured to show in our reports that the Health Board is appreciative of the changes that have taken place in regard to the management of health matters. The essential change is that "The old public health was concerned with the environment, the new is concerned with the individual; the old sought the sources of infectious diseases in the surroundings of man, the new finds them in the man himself." Our object is the awakening of the public conscience and securing the encouragement of an intelligent public opinion to bring, through the practical application of our health laws, the increased length of life, increased productive capacity of the human asset, decreased sickness and misery, and bring about the culmination of national prosperity produced by happy, healthy, contented people.

I will refer briefly to the different branches of the Department.

TUBERCULOSIS.

The work in regard to tuberculosis is making very satisfactory progress. Dr. A. S. Lamb, our Travelling Diagnostician, is reporting a real increase in the interest which is being manifested by the people in general.

He is establishing clinics in different parts of the Province, in co-operation with the local medical men and with the assistance of our Public Health Nurses. He deals with this in his report, which we are publishing.

The figures in regard to tuberculosis, which we publish, appear large considering the population, but we must take into account that British Columbia, for climatic reasons, is regarded as a Mecca for tuberculosis cases which come here from all parts of the country. In addition, the number of deaths is swollen by the deaths amongst the Indians, the Chinese, and the Japanese, and Dr. Lamb, in his report, is publishing these figures, which are illuminating.

In connection with the Canadian Tuberculosis Association, and through financial assistance of the Federal Indian Department, surveys of the Indians have been carried out during the past two years under the management of Dr. Hill, Professor of Health in the University of British Columbia and Director of Laboratories, together with Dr. Vrooman, formerly Superintendent of the Tranquille Sanatorium, and Dr. Lamb. The results of their work are embodied in comprehensive reports which will be published in the Annual Report of the Canadian Tuberculosis Association.

The work has been done in a very thorough manner, and is probably the best of its kind that has been undertaken in regard to the Indians in any part of the continent.

We believe that the Federal Department has under advisement the establishment of a Tuberculosis Sanatorium for the Indians. The Provincial Government has already under construction a hundred-bed unit at the Provincial Sanatorium at Tranquille, and there has been provided in the City of Vancouver a ninety-bed accommodation for advanced cases, in order to relieve the Sanatorium of the care of these cases and to permit of more cases in the incipient stage being treated.

VENEREAL CLINICS.

Our venereal clinics are carrying on their work in a most satisfactory manner. Their real purport is being better understood by the public, and without very much effort on our part the attendance is increasing and we are working our clinics to capacity. We have had to enlarge the accommodation in the clinic in Vancouver three different times.

Educational work is also being carried on through different agencies, and we are satisfied that there has been an appreciable control of the disease established—that is, on the curative side—and these results are being shown by the decrease in the number of patients in our mental hospitals since the inception of our work.

The preventive side is a problem which requires very earnest work to bring about appreciable results. The control of the infected person, especially in our cities, is a problem to which no satisfactory solution has been offered, other than the hope, by education through meetings and literature, of impressing upon the rising generation the real dangers of venereal disease.

One striking result, as we gather from our reports, is the account given by the drug trade of the great decrease in requests for "quack" remedies and the increase in the demand for prophylactic packages. We take it that this is one of the best indications of advance in the education of the public.

LABORATORIES.

The laboratories are probably the best barometer of our work, and the increase in the work in these places us amongst the leaders on the continent; that is, for the work done on a *per capita* basis.

Since the last Report we have opened another laboratory at Kelowna, making four Provincial Laboratories, and we have requests from two other centres in the Province for similar establishments.

In the report issued by the American Public Health Association on the laboratory-work in North America, the amount of work done in our laboratories shows that we are in the forefront in regard to our use of these facilities.

In addition to this, we are receiving co-operation from the municipalities in a very satisfactory manner, and they are contributing a yearly grant in preference to paying for the work as it arises from time to time. They are satisfied that the control of infectious diseases is much more effective with the help of the laboratory and are recognizing that a yearly contribution is a real economy.

In connection with the laboratory-work, vaccines and antitoxins are sent out free on request, and for the year ended June 30th, 1927, the following have been furnished: 12,445 points smallpox vaccine, 3,769,000 units diphtheria antitoxin, 40 doses diphtheria toxoid, 7 packages Schick test for diphtheria, 2,083½ c.c. scarlet fever antitoxin, 9 packages Dick test for scarlet fever, 623 doses typhoid vaccine, 207,000 units tetanus antitoxin, 7 packages whooping-cough serum, 8 packages anti-meningitis serum, 6 packages anti-streptococci serum, and 1 package hæmostatic serum.

SANITATION.

The report of our Chief Sanitary Inspector is included herewith.

Under the general head of sanitation, we are concerned with the larger problems in regard to water-supplies, sewerage, transportation, public buildings, and more especially with the logging and mining camps and the inspection of fruit and fish canneries. This work is carried out in a very systematic manner and the greatly increased problem of the auto tourist is being handled satisfactorily.

Following a severe epidemic of typhoid fever in New York, intensive work was carried on by the United States Public Health Service in the regulation of the oyster-beds. We have become, by arrangement, an integral part of this work and our inspection of all our oyster-beds are accepted by the United States Public Health Service, which permits of the export of the oysters to the United States.

PUBLIC HEALTH NURSING.

I have to report a continued improvement and extension of this work. The University of British Columbia has enlarged the scope of the work, and has so arranged the schedule that more time will be given in the course for the actual work in the field in connection with our existing health centres. One month of the course will be spent by the students under charge of the Supervising Nurses in our health centres, and the nurses will take an active part in the public-health nursing work as carried out in British Columbia.

We are very much gratified indeed to report an enlivened interest on the part of the teaching profession, and wish to recognize the co-operation that we are receiving from the Provincial Education Department.

It is a splendid evidence of the advance of public opinion in this question that there are usually five or six places waiting for nurses, and, in addition, we are receiving requests from the local School Boards that our nurses be detailed to teach health in the schools.

In a former report I mentioned that I preferred to call our nurses public-health "teachers" rather than public-health nurses. This idea has been kept uppermost and we are reaping the effects during the present time.

INFECTIOUS DISEASES.

On the whole, the past year has been favourable in respect to the occurrence of infectious diseases. We have had two possible threatened epidemics, one of smallpox occurring in the

Nanaimo District and later in the season for a time it appeared as if we were in for a very serious epidemic of poliomyelitis.

The smallpox manifested itself first in one or two cases in the sparsely settled country districts and, being of such a mild type, unfortunately did not alarm the people. While the usual precautions were taken and quarantine established in as far as possible, it was difficult to persuade the people that there might arise from this a serious state of affairs. It continued to spread through the district. Officials from the Board were sent up. Free clinics for vaccination were established which were well patronized, and almost immediately there was a subsidence in the number of the cases.

In this connection, I would like to point out, more especially to the authorities of Greater Vancouver, that it is a very great mistake to neglect precautions at any time in regard to smallpox. The experience which Vancouver had in 1925–26, when it was very difficult to persuade the authorities to take any active steps in the prevention of smallpox, led to the development of an epidemic which brought about a ban placed on the city by the United States authorities. This soon convinced the business element of the necessity of something being done, and we succeeded in vaccinating a great many people, and more especially the school-children.

During the past summer season, some cases developed in the suburbs of the city and the enforcement of the regulations as to vaccination of school-children was carried out, until a stop was put to it by the School Board, who, under a technical interpretation of the terms of the regulations, said that they were not lawfully permitted to spend money for vaccinating the school-children by the school doctor in the school offices. This difficulty was met by the City Board of Health offering to assume charge and bear the expense, but they were not allowed the use of the school offices.

This action on the part of the School Board is very much to be regretted. The children were accustomed to attending these offices for the regular examinations by the School Medical Inspector and the nurses, and it was no difficulty to carry out the vaccination. Following the action of the School Board, the City Board of Health advertised free clinics to be established, but they were not patronized to any extent.

During the past three weeks there has developed in the schools of South Vancouver a dozen cases, and active measures are being taken to endeavour to nip the possibilities in the bud.

Vancouver is a seaport town, open all the year round, and in communication with all ports in the world. The civic authorities must recognize that under present international conditions any city in the position of Vancouver must have a clean bill of health if they expect to carry on business.

POLIOMYELITIS.

In 1916 a severe epidemic of poliomyelitis existed in New York, over 20,000 cases with over 5,000 deaths. Previous to that, poliomyelitis had been very rare in North America, but since then it has gradually crept over the country, and during the past year large numbers of cases have been reported from the different States, nearly every State in the Union being affected. In July an outbreak occurred in the neighbouring Province of Alberta, and in August cases developed in British Columbia in the middle interior, and there were reported in all 175 cases, but a number of these were reported in carrying out the regulations to treat suspected cases as true cases.

The medical profession co-operated in a splendid manner with the Provincial Board of Health, and by October the conditions were well in hand. This was followed, by the end of the month, with a complete subsidence.

Our knowledge of poliomyelitis as to causation has been enlarged by the experimental work which has been carried on in the laboratories, and we know that the symptoms are due to the effects from a virus which is so minute that it has not been isolated to be examined, but in the laboratories they have been able to transmit the disease to monkeys. There has not, however, as yet, been brought forward a serum which would act either as a prophylactic or as a curative measure. There has been, however, use made of the serum taken from paralytic cases and the same procedure is carried out with this as in the treatment of measles.

Immediately following the outbreak, the medical profession was circularized and the addresses of the patients and information as to the date of attack and the time of development of paralysis was asked for. The medical profession co-operated in this by giving us the

names and addresses, and a letter was sent to the parents asking for permission to obtain blood. We have had a very good response indeed, and our laboratories are collecting serum which we will have on hand should another outbreak occur within the next year.

A table of infectious diseases reported during the year is incorporated in this Report, and the regional report of diseases is as follows:—

Chicken-pox.—McBride, Parksville and District, Port Essington, and Williams Lake and District.

Influenza.—Britannia Beach, Campbell River and District, Clayoquot Sound District, Edgewood District, Invermere and District, Kimberley, McBride, Oliver and District, Smithers, and Williams Lake and District.

Measles.—Ashcroft and District, Burnaby Municipality, Merritt and District, Mission, Parksville and District, Pitt Meadows Municipality, Port Simpson, Vancouver, and Williams Lake and District.

Mumps.—Alert Bay.

Rubella (German Measles).—Burnaby Municipality, Cranbrook and District, Cumberland, Kamloops, Kimberley, Pitt Meadows Municipality, and Point Grey (University District).

Scarlet Fever.—Kamloops and Merritt and District.

Smallpox.—Kamloops District and Nanaimo and District.

Whooping-cough.—Cranbrook and District, Duncan and District, and Invermere and District.

Cemetery-sites approved.—New Westminster District (Jewish), Salmon Arm, Grindrod, and Clo-oose.

Sewage-disposal Systems approved.—Point Grey (extensions), Vancouver (extensions), West Burnaby, South Vancouver (extensions), North Vancouver City (extensions), Prince Rupert (extensions), Powell River (extensions), and Trail (extension).

Water-supply Systems approved.—Point Grey (extensions), North Vancouver City (Rice Lake storage system), North Vancouver District (Kennedy Lake supply and extension of main), Vernon (extension and alterations), Sechelt (Chapman Creek supply), West Vancouver (Eagle Lake supply), Saanich (extensions and alterations), South Vancouver (extension), Rossland (extensions), Prince George (extensions), and Nelson (renewals).

I beg leave to ask, sir, for your consideration for increased accommodation for our Department. Our Vital Statistics Branch is showing a wonderful growth and the work has increased over 100 per cent. in the past four years. A full report of their activities is appended.

We are also appending a full report of the Medical Inspection of Schools, and I think any one reading it will find it very interesting in the demonstration that we are able to give of the improvements.

In asking for further accommodation, I am also asking for an increase in staff. The work has grown to such proportions that the lack of a trained staff is militating against the expansion of the Department. We can truly say that we have accomplished the main purpose of our work—that is, educating the public—and the demands from the public for expansion of our work are becoming insistent. I hope that you will please take under careful consideration our request for the addition of an Epidemiologist to the staff. The question of expense should not enter in, as he will save his salary five times over in the checking of infectious diseases and in the work which he can do along educational lines.

I would also like, sir, to express, for myself and staff, appreciation of the co-operation which we receive from yourself, and I would like to take this opportunity of expressing to you my appreciation of the splendid co-operation that I receive from the staff. The increase of our work necessitates them working, on occasion, overtime, and a request for this is always cheerfully complied with. The fact that we have been able to make such satisfactory progress is due to the cheerful help that I am receiving. I may say that the staff and myself appreciate the active interest of yourself in our work—an interest that is based upon the idea of understanding the policies and the details of the Department and lending to our success your help and encouragement.

I have the honour to be,
Sir,
Your obedient servant,

H. E. YOUNG, M.D.,
Provincial Health Officer.

TABLE SHOWING RETURNS OF CASES OF CONTAGIOUS DISEASES IN THE PROVINCE, JULY, 1926, TO JUNE, 1927.

	Cerebrospinal Meningitis.	Chicken-pox.	Diphtheria.	Erysipelas.	Infantile Paralysis.	Leprosy.	Measles.	Mumps.	Rubella (or German Measles).	Scarlet Fever.	Sleeping Sickness.	Smallpox.	Tuberculosis.	Typhoid Fever.	Whooping-cough.
Agassiz and District	....	2	....	....	....	....	.....	10	.....	....	....	....	....	1	....
Alert Bay and District	....	.....	1	....	....	....	24	75	.....	....	....	....	....	....	....
Alexis Creek and District	....	.....	1	....	....	....	2	....	.. ...	....	....	....	....	....	....
Anyox	....	....	....	....	....	....	7	....	....	....	....	....	....	....	50
Ashcroft and District	....	.....	....	....	....	....	10	2	.....	....	....	1	....	....	....
Atlin and District	1	.....	....	....	....	....	.....	....	12	5	....	....	....	....	....
Bella Bella and District	....	.....	....	....	....	....	4	1	2	....	....	....	....	....	4
Britannia Beach and District	1	.....	....	....	....	....	41	43	3	3	....	....	....	....	....
Burnaby Municipality	....	79	21	....	....	....	670	33	197	44	....	3	6	3	61
Burns Lake and District	....	12	....	1	....	....	.....	.....	.....	.....	....	.....	....	....	....
Campbell River and District	...	1	...	....	....	....	25	6	.....	....	....	6	....	....	....
Chase and District	....	.....	....	....	....	....	1	1	.....	....	....	....	....	....	1
Chilliwack City	....	16	....	....	....	....	.....	11	6	....	....	3	....	....	....
Chilliwack Municipality	....	18	1	....	....	....	.....	3	104	11	....	....	....	....	....
Clayoquot Sound District	...	25	....	....	....	....	2	1	.....	....	....	....	....	....	30
Clinton and District	....	.....	....	....	....	....	33	....	.....	....	....	....	....	....	....
Coalmont and District	....	.....	....	....	....	....	3	....	1	....	....	....	....	....	....
Cobble Hill and District	...	.....	....	....	....	....	7	....	.....	2	....	....	....	....	....
Corbin and District	....	.....	....	....	....	....	2	6	.....	....	....	....	....	1	....
Courtenay	....	3	1	....	....	....	12	....	.... .	....	....	4	....	....	3
Courtenay District	....	.....	2	1	....	....	21	1	.....	....	....	3	....	....	....
Cowichan, North, Municipality	....	1	....	....	....	....	1	....	.....	5	....	1	....	....	....
Cranbrook and District	....	12	10	....	....	....	4	....	10	3	....	....	....	....	10
Creston and District	....	16	....	....	....	....	86	....	30	....	....	....	....	2	....
Cumberland	....	18	....	....	....	....	32	....	11	1	....	....	....	....	5
Cumberland District	....	.....	....	....	....	....	.....	....	.....	2	....	2	....	....	....
Delta Municipality	....	4	8	....	....	....	21	....	19	1	....	1	....	....	....
Duncan and District	....	10	9	....	....	....	8	....	12	9	....	....	4	....	60
Edgewood and District	....	.....	....	....	....	....	2	....	.....	....	....	....	....	....	....
Enderby and District	....	.....	....	....	....	....	.....	1	.....	....	....	....	....	....	....
Esquimalt Municipality	...	22	....	....	....	....	17	....	.....	....	....	....	2	....	7
Essondale	....	.....	....	....	....	....	.....	....	.....	....	....	3	....	....	....
Fernie and District	....	30	2	....	....	....	32	1	4	....	....	....	....	....	6
Field	....	.....	....	....	....	....	5	3	.....	2	..	....	....	....	4
Gibson's Landing	....	15	....	....	....	....	2	30	.....	....	....	....	....	....	5
Giscome and District	1	.....	....	....	....	....	2	....	6	7	....	....	....	....	....
Golden and District	....	.....	....	....	....	....	.....	....	.....	1	....	....	....	....	....
Grand Forks and District	....	.....	....	....	....	....	6	....	20	3	....	....	....	....	....
Greenwood and District	....	2	2	....	....	....	5	..	.....	....	....	....	....	....	2
Hazelton and District	....	....	....	....	....	....	.....	.....	.....	....	....	....	....	....	10
Hedley and District	....	23	....	....	....	....	21	....	.....	1	....	....	....	....	....
Hope District	....	17	2	....	....	....	32	4	.....	4	....	4	....	....	16
Invermere and District	....	.....	....	....	....	....	2	....	84	....	....	....	....	....	47
Kamloops	....	5	1	....	....	....	18	5	300	46	....	1	1	....	5
Kamloops District	....	1	....	....	....	....	6	....	.....	14	....	22	2	4	....
Kaslo and District	....	3	....	....	....	....	.....	....	.....	....	....	....	....	....	7
Kelowna and District	....	.....	....	....	....	....	1	....	.....	11	..	13	....	5	....
Kimberley	....	.....	....	....	....	....	.....	....	57	....	....	2	....	....	9
Ladysmith	....	.....	....	1	....	....	.....	....	.....	....	....	2	....	....	....
Langford and District	....	1	....	1	....	....	15	....	.....	1	....	....	....	....	11
Lillooet and District	....	.....	....	....	....	....	30	4	.....	....	....	....	....	1	....
Logan Inlet	....	....	....	....	....	....	2	....	.....	....	....	....	....	2	....
Lucerne and District	....	1	....	....	....	....	1	....	.....	....	....	....	....	....	....
Lytton and District	....	7	....	....	....	....	3	26	7	....	....	....	....	....	3
Matsqui Municipality	....	3	....	....	....	....	16	18	.....	....	....	....	....	....	45
Mayne Island and District	....	....	....	....	....	....	6	....	1	1	....	....	....	....	12
Merritt and District	....	18	1	3	....	....	308	16	.....	247	....	1	22	3	....
Michel	....	.....	....	....	....	....	5	....	.....	....	....	....	....	....	....
Mission and District	....	13	1	....	....	....	132	30	.....	3	....	1	....	3	....
McBride and District	....	19	....	....	....	....	1	....	.....	....	....	....	....	....	....
Nanaimo	....	4	2	....	....	....	28	....	.....	3	....	36	....	....	....
Nanaimo District	....	.....	1	....	....	....	5	....	.....	3	....	112	....	....	....
Nelson	....	9	....	5	....	....	27	4	2	13	....	....	2	8	2
Nelson District	....	15	....	....	....	....	.....	....	4	2	....	....	1	4	10
New Denver	....	.....	....	....	....	....	.....	....	1	....	....	....	....	....	....
New Westminster	....	27	3	....	....	....	528	17	46	12	....	....	....	....	33
Oak Bay Municipality	....	6	1	1	....	....	7	....	16	1	....	....	....	....	....
Ocean Falls	....	3	....	....	....	....	.....	....	.....	....	....	....	....	..	26
Oliver and District	....	3	....	....	....	....	.....	....	.....	....	....	....	....	....	....
Parksville and District	....	80	1	....	....	....	150	....	.....	1	...	2	1	....	.
Pitt Meadows Municipality	...	21	....	....	....	....	75	....	125	....	....	....	....	....	....
Point Grey Municipality	....	25	47	....	....	...	412	8	263	31	....	1	1	2	15
Point Grey University District	....	.....	....	....	....	....	7	....	209	....	....	....	....	....	....
Port Alberni	....	....	....	....	....	....	.....	....	.....	....	....	1	....	2	70
Port Coquitlam	....	.....	....	....	....	....	7	....	.....	....	....	....	....	....	5
Port Hammond	....	.....	1	....	....	....	.....	....	.....	2	....	2	....	....	....
Port Moody and District	....	.....	1	....	....	....	.....	....	.....	....	....	....	....	....	....
Port Simpson and District	....	20	....	....	....	....	50	1	.....	....	....	....	....	....	....
Carried forward	3	610	120	13	....	....	2,982	361	1,552	495	...	227	42	41	574

TABLE SHOWING RETURNS OF CASES OF CONTAGIOUS DISEASES IN THE PROVINCE, JULY, 1926, TO JUNE, 1927—*Continued.*

	Cerebrospinal Meningitis.	Chicken-pox.	Diphtheria.	Erysipelas.	Infantile Paralysis.	Leprosy.	Measles.	Mumps.	Rubella (or German Measles).	Scarlet Fever.	Sleeping Sickness.	Smallpox.	Tuberculosis.	Typhoid Fever.	Whooping-cough.
Brought forward	3	610	120	13	....	....	2,982	361	1,552	495	....	227	42	41	574
Powell River	....	....	....	....	....	....	65	1	....	46	....	....	....	....	10
Prince George and District	....	....	2	....	....	....	6	4	....	3	....	....	3	....	....
Princeton and District	....	65	....	....	....	....	1	....	....	....	....	....	....	....	....
Queen Charlotte City	....	....	....	....	....	....	58	....	....	....	....	....	....	....	6
Quesnel and District	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Revelstoke and District	....	15	....	....	....	....	175	....	....	30	....	....	6	2	20
Richmond Municipality	....	10	14	....	....	....	50	20	35	5	....	4	2	....	....
Rock Bay and District	....	1	....	....	....	....	2	....	....	....	....	....	....	....	....
Rossland	....	17	....	....	....	....	10	....	43	5	....	....	....	4	1
Saanich Municipality	....	66	3	....	....	....	80	6	58	28	....	....	..	....	4
Salmon Arm and District	....	12	....	....	....	....	4	....	2	9	....	....	1	....	....
Saltspring Island	....	2	....	....	....	....	1	....	....	....	....	....	....	....	5
Sidney and District	....	....	....	....	....	....	33	....	....	....	....	....	2	....	....
Smithers and District	....	6	....	....	....	....	....	....	....	....	....	....	....	....	....
Sooke and District	....	2	....	....	....	....	2	....	....	4	....	....	....	....	19
Summerland Municipality	....	....	....	3	....	....	1	1	4	1	....	....	....	....	....
Surrey Municipality	....	10	1	....	....	....	25	....	....	....	....	....	....	....	25
Trail City	....	8	2	....	....	..	46	12	6	3	....	....	....	1	....
Trail District	..	....	....	....	....	....	9	1	3	11	....	....	....	1	....
Ucluelet	....	....	....	....	....	....	13	....	....	....	....	....	....	....	....
Vancouver	8	300	272	62	....	....	2,383	60	....	207	1	17	122	14	52
Vancouver, North, City	....	20	5	....	....	....	49	....	....	....	..	1	....	....	1
Vancouver, North, District	....	....	1	....	....	....	46	....	....	....	....	2	....	....	....
Vancouver, South	....	79	49	2	....	....	1,311	41	....	37	....	....	8	....	40
Vancouver, West	....	....	....	....	....	....	63	....	....	5	....	....	....	....	....
Vernon and District	....	....	....	....	....	....	....	....	....	4	....	....	....	1	....
Victoria	....	125	8	1	....	1	282	1	54	43	....	1	49	....	67
Williams Lake and District	....	250	....	....	....	....	150	....	....	....	....	....	....	....	....
Woodfibre and District	....	....	....	....	....	....	10	1	13	....	....	....	....	....	2
Totals	11	1,599	477	81	....	1	7,857	509	1,770	936	1	252	235	64	826

GENERAL REPORTS.

SANITARY INSPECTION.

SANITARY INSPECTOR'S OFFICE,
VICTORIA, B.C., June 30th, 1927.

H. E. Young, M.D., C.M., LL.D.,
Provincial Health Officer, Victoria, B.C.

SIR,—I have the honour to submit the Seventeenth Annual Report for the Sanitary Branch of your Department.

With increasing population, both permanent and transient, the work of this division has increased to such an extent that any thought of holidays has been submerged to the background. New industries to develop our natural resources have called for more field-work along prophylactic lines. Fortunately, the general public is becoming alive to the value of good health through sanitary precaution and a disposition to co-operate with Health Officers and Sanitary Inspectors is far more evident than in pioneer days.

Briefly outlining my work alphabetically, I must commence with the new source of anxiety, that of the

AUTO TOURIST CAMP.

Camps are now provided for visiting autoists by nearly all the municipalities, also as a business by caterers to this class of tourists. These camps are under the inspection and jurisdiction of local sanitary officers and are in the main quite satisfactory. Our greatest concern lies with the indifferent and selfish camper that stops overnight at the first convenient place, usually near a creek, litters the place with all kinds of refuse and insanitary filth, and finally neglects to see that his camp-fire is entirely extinguished. It requires no stretch of imagination to see what a twofold menace to health and property is engendered by such conduct. In view of the increasing number of properly located and operated auto camps on all our main roads, it is proposed that in future no individual camping on or near roadside will be permitted.

BATHING CAMPS.

The cities have been deserted by the younger generation in their love for the sea and open spaces. Seaside camps all over the southern portion of British Columbia have been literally swamped, especially at week-ends, when the grown-ups make their periodical visits. One of our largest marine transportation companies has shown vision and far-sightedness in establishing many new camps at seaside points. These camps consist of numerous cottages with modern conveniences, and in several camps the visitors may prefer a fully equipped hotel. At these company-owned camps sanitation is not lost sight of, but unfortunately we have to deal with many places used and rented by private parties where the tenants are transient, and where nothing but the most primitive sanitary conveniences are provided, and very often the drinking-water is of doubtful purity. These places, scattered along a coast-line of several hundred miles, call for frequent visits and enforcement of the Sanitary Regulations. This constant vigilance, coupled with the open-air life, is probably responsible for the freedom from all infectious or contagious disease at our popular seaside resorts.

CANNERIES.

Our fruit and vegetable canneries, which are mostly located in the Okanagan country, are operated by men who are, fortunately, versed in the laws of sanitary cleanliness and take a pride in having visitors see every part of their establishment, and co-operating at every turn with inspecting officials.

FISH-CANNERIES.

Our fish-canneries form probably the leading food-export industry of Canada. The fact that British Columbia canned salmon commands the highest prices in the world's largest market is explained by the fact that in no part of the universe is the catching and canning of salmon brought nearer the peak of perfection in sanitary and expeditious handling than in British

Columbia. Every year sees new canning-machines added, so that in many of our newer canneries the fish is scarcely touched by human hands from the time it leaves the net until canned, cooked, and ready for consumption. Federal Fishery Overseers are on constant patrol to ensure that only seasonable and strictly fresh fish are used, whilst our own regulations are strictly enforced.

OYSTER-BEDS.

Another important and increasing food product coming under the jurisdiction of this Department is oysters.

It is not generally known that an increasing export trade is being built up by our oyster-ground operators. There are more than a score of firms operating oyster-beds on British Columbia coastal foreshore. Many of them are exporting considerable of their products to the United States. Until quite recently this was accomplished without difficulty.

During the early part of this year the United States Health authorities at Washington, D.C., formulated new regulations dealing with oysters and the oyster-growing industry. These regulations are applicable to every oyster-bed in the United States, and are also applied to oysters exported to the United States, inasmuch as before oysters can be shipped from Canada to the United States a certificate issued by the local Provincial Board of Health must state that the beds are free from sewage; the buildings, containers, and implements are sanitary; and the operators and employees clean and free from skin, blood, or contagious disease.

Fortunately these regulations do not impede the export of oysters because every oyster-bed in British Columbia is located far from city sewers, and the exporters are all of the type known as sanitary cranks and only too glad to carry out any suggestions made by your Inspector. The oyster industry here is comparatively in its infancy, but we anticipate no difficulty in protecting the public health from the slightest chance of ill-effect through oysters, in so far as their culture is concerned.

The safe and proper handling of oysters after they are in the hands of retailers is now a matter receiving the consideration of this Department.

MINING AND LOGGING CAMPS.

The mining and logging development in British Columbia is now attracting the world at large.

The industries are largely controlled by big corporations with foresight enough to realize the value of sanitation for employees. Nearly all the large industrial camps are now conducted upon sanitary lines which exceed the demands of our regulations, resulting in a better class of work and a contented people. This applies especially to such places as Britannia Mines, Ocean Falls, Kimberley, Powell River, Woodfibre, Port Alice, and Anyox.

Our trouble, if any, is with the small individually owned camps. These are subject to periodical visits.

NUISANCES.

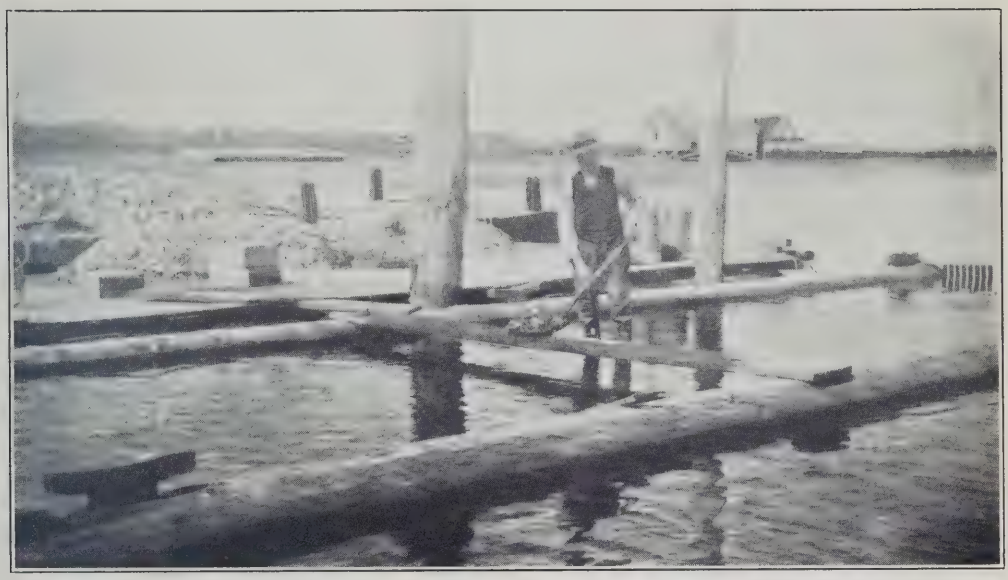
Nuisance complaints this year show an increase, which can be explained as follows:—

In a district which up to a few years ago was a wilderness of isolation a firm started a piggery on several acres. The place was conducted along fairly sanitary lines, but of recent years adjacent acreage has been taken up, cultivated, and homes established by most desirable newcomers. In the meantime the piggery flourishes, but the ground is becoming so saturated with the effluent of the septic tank that, in spite of precautions, a strong nauseating odour permeates the vicinity for half a mile distant. This is especially noticeable on evenings following a hot day with low barometric pressure. A new sub-irrigation system is now being considered in an effort to abate this nuisance. This is a fair example of the problems which your sanitary officers are called upon to solve.

Another nuisance dealt with was the odour from a fertilizing and fish-oil factory adjoining the residential part of a small city. This was abated by the owners closing down for the summer season. This concern established its plant without a permit from this Department.

Other nuisances arise from improper and inadequate disposal of septic-tank effluent. These have been dealt with.

To enumerate all the alleged nuisances would consume much time. Some are serious, whilst many are petty, but all have to be investigated and corrective action taken where needed to safeguard public health.



CRESCENT OYSTER-BEDS, 1927. THIS SHOWS ONE OF THE SUB-FLOATS AND RAFT-FLOATS WHERE THE SORTING-OUT OF MATURED OYSTERS TAKES PLACE. THE VERY SMALL ONES ARE RETURNED TO THE PROPAGATING-GROUNDS.

CRESCENT OYSTER-BEDS, SHOWING MOUTH OF SERPENTINE RIVER AT LOW TIDE.

WATERSHEDS.

The Sanitary Regulations provided especially for watershed areas have been most favourably commented upon by visiting Health Officers and Sanitarians. These regulations were revised during the past year, and are as follows:—

Sanitary Regulations governing Watersheds.

These regulations shall be applicable to every person entering upon any watershed area above or beyond a municipal intake, reservoir, or dam.

1. (*a.*) Watershed Sanitary Inspector or Inspectors shall be appointed, subject to the approval of the Provincial Board of Health, by the City or Municipal Council concerned.

(*b.*) Watershed Sanitary Inspectors shall have full authority to enforce these regulations. They must reside upon the area under their supervision. They shall not be absent from the watershed for a period of more than twenty-four hours per week without the sanction of the local Medical Health Officer or Chief Provincial Sanitary Inspector.

(*c.*) The Inspectors shall order the liberal use of quicklime or other disinfectants when and wherever needed.

(*d.*) The Inspector shall send a written report of the watershed conditions under his charge to the Provincial Board of Health and a copy to the local Medical Health Officer not less than every two weeks.

(*e.*) The Provincial Chief Sanitary Inspector shall make periodical visits to see that these regulations are being enforced, and shall have power to change or add to these regulations according to nature of industrial operations and changing conditions or emergencies. Such changes must be subject to the approval of the Provincial Board of Health.

(*f.*) Operators shall provide food and shelter for visiting authorized Inspectors when upon the watershed.

2. All officials and employees of companies operating in the watershed shall produce to the Inspector a certificate from a licensed medical practitioner that they are not affected by any disease which, in his opinion, would pollute the water.

3. (*a.*) Certificates of health, successful typhoid inoculation, or Widal test certificate must first be produced before any person will be permitted to work for the company, in any capacity, above the city's intake.

(*b.*) Certificate shall state: (1) That he is not suffering now from any communicable disease; (2) that he is not a "carrier" of typhoid fever, diphtheria, or scarlet fever.

4. (*a.*) All persons entering the watershed, for whatever purpose, other than officials and employees of the company, must first submit themselves to a blood test (Widal) and certificates of health must state: (1) That the blood-test is negative; (2) that he is not suffering from any communicable disease; (3) that he is not a "carrier" of typhoid fever, diphtheria, or scarlet fever.

(*b.*) No person will be permitted to enter the watershed above the intake without first presenting the aforementioned certificate of health to the Inspector in charge.

5. All persons entering upon watershed area must satisfy the Sanitary Inspector in charge that they are provided with the necessary equipment and convenience to safeguard the watershed area from contamination.

6. Instructions and rules on sanitation of camps to be posted in all camp buildings in a conspicuous position.

7. *Camps.*—The location of all camps to be subject to the approval of the Provincial Board of Health and the local Medical Health Officer after consultation with the manager of the interested company.

Arrangements must be made for safe and thorough disposal of garbage, refuse, tins, etc., or else remove same to an incinerator.

All liquid waste, slop-water, etc., from the cook-houses, bathing-houses, laundry, etc., must be run in pipes, or by other means acceptable to the Inspector, into a properly constructed tank and chlorinated or otherwise treated so as to effect sterilization.

Every camp shall be equipped with a wash-house and laundry containing a stove, tubs, and facilities for drying; also wash-basins, shower-baths, soap, and all proper sanitary facilities to the approval of the Inspector. Cleanliness, of course, is necessary for the health of the men and it must be insisted upon. Persistently unclean persons will be debarred from the watershed.

Bathing or laundry-work in the creeks or streams is absolutely prohibited.

All cook-houses, dining-rooms, etc., to be screened to prevent the entrance of flies.

Meat-houses and store-rooms must be fly-proof and built to the satisfaction of the Inspector.

All bunk-houses must be built with adequate light and ventilation, the interior limewashed or painted and fitted with iron bunks.

Plans and specifications of all buildings to be erected to be furnished in duplicate to and approved by the Provincial Board of Health.

8. *Latrines.*—Deep pit not less than 8 feet by 30 inches, lime-treated daily, to be filled in with earth or gravel when contents reach within 2 feet of surface; or a pail system of galvanized-iron pails with covers, which can be easily handled and removed to the incinerator. The location of any latrine must be selected by the Inspector in Charge.

Chlorinated or quick lime must be available at all latrines and all latrine cans must have liberal daily allowance when in use.

When necessary to install urinals on work away from latrines, soak-aways must be provided and constructed under approval of Inspector in Charge.

For all persons engaged or employed above the intake where the work is not convenient to camp latrine, the pail system must be used and removed daily to the incinerator. Any man found not using these pails must be instantly discharged.

All roads for rail-cars, trams, trucks, or other vehicles must be constructed and drained in such a manner as not to pollute any watercourse or stream.

Maps of the property shall be furnished to the Provincial Board of Health and the municipalities concerned, showing as far as possible the plan of the ground and sites of proposed buildings and roads in their relative positions to any streams or watercourses.

The Provincial Board of Health maintains the right to alter, revise, or add to these regulations from time to time as deemed necessary for the preservation of all domestic water-supply. In cases of emergency the Inspector may make such temporary regulations as are necessary, which shall hold good until passed upon by the Provincial Board of Health.

In cases of dispute between the municipal authorities and the company or individual as to the interpretation of these regulations, the Provincial Board of Health may be appealed to to act as arbitrator. The Provincial Board's decision to be final.

Sanitary Regulations governing Watersheds approved April 2nd, 1918, and July 6th, 1923, are cancelled.

PROVINCIAL BOARD OF HEALTH.

Approved by the Lieutenant-Governor in Council, sitting as the Provincial Board of Health, the 13th day of October, 1926.

The observance of these regulations protects the purity of water supplying Fernie, North Vancouver City and District, Greater Vancouver, and Vernon. The regulations are enforced by the municipalities affected. It may be noted, *en passant*, that no water-borne disease has occurred in these cities since the aforesaid regulations became law.

Inspection visits to industrial camps number 200; to canneries, 125; visits to investigate nuisances, 55; to watersheds to consult, advise, or relieve Resident Inspectors, 33; visits to oyster-grounds, 20; and miscellaneous visits of inspection and inquiry, 70; making a total of 503 visits during the year.

The work, whilst arduous, is made lighter by the courteous and co-operative manner of Provincial and municipal officers throughout the country, and the same can be said for operators and employees throughout British Columbia.

I have, etc.,

FRANK DEGREY,
Chief Sanitary Inspector.

COMBINED REPORT OF TRAVELLING MEDICAL HEALTH OFFICER AND INSPECTOR OF HOSPITALS.

PROVINCIAL BOARD OF HEALTH,
VICTORIA, B.C., July 31st, 1927.

H. E. Young, M.D., C.M., LL.D.,
Provincial Health Officer, Victoria, B.C.

SIR,—I have the honour to submit herewith my Fourth Annual Report as Travelling Medical Health Officer and Inspector of Hospitals for the Province.

While my work as Tuberculosis Diagnostician for the last year is very much a reduplication of the previous years, having been carried on under the same guiding principles of co-operation with the family doctors, there has been sufficient variation to still make the work very interesting. There has been a steady yearly increase in the number of cases examined, more marked the last year than previously, showing added interest not only of the medical profession, but of the public at large. The interest of the doctors is further illustrated by the number of inquiries that have come in as to when my next visit would take place.

I mentioned in my last annual report that I believed extra clinical service in Victoria would be justified. After endorsation of the plan by the Victoria Medical Society, a clinic has been held here during the second week of every second month. Much of the increase in the total examinations during the year has come from this clinical service. The Provincial Royal Jubilee Hospital Board has very kindly provided room and nursing service as well as X-ray service for this work. The Provincial Red Cross has very generously guaranteed the cost of X-ray films (the Hospital only charging for films and wear and tear of machine) up to $1,500. This amount will be ample for our needs with something left over for next year.

Through a bequest of the late David Spencer, a building is in course of construction and nearing completion on the grounds of the Jubilee Hospital as a separate unit to be used as a tubercular clinic. This will assure permanency and will also act as an advertisement to the city that work of this nature is being done.

The occasional afternoon clinic at the Saanich Health Centre has been continued.

St. Joseph's Hospital has been equally generous in placing X-ray and other facilities at our disposal.

The regular clinics at Nanaimo have been continued during the year with interest well sustained. The balance of the Province has been covered from one to three times, despite the fact that hospital inspection has taken up an increasing amount of my time.

Another factor that has contributed this year to the increased number of cases examined was the prevalence during the fall and winter months of many cases of influenza. Many chest conditions were left in its wake and presented some difficulties in diagnosis. Particularly is that to be expected when we consider that many latent cases of T.B. become reactivated after such acute chest infections.

One of the outstanding events of the T.B. world was the meeting of the International Union against Tuberculosis in Washington, D.C., September 29th to October 2nd, 1926, followed from October 4th to 7th by four days' session of the National Tuberculosis Association, which included United States of America and Canada. In fact, this meeting of the National Association was but a continuation of the International Union. This latter only meets every two years, so it will probably be many years before another meeting is held in America. This meeting brings together most of the greatest minds in the world on tuberculosis-work and every phase of same is discussed. It was my great privilege, along with nearly every Canadian tuberculosis-worker, to attend the sessions of this congress.

As the American Hospital Association was meeting at Atlantic City the early part of the same week that the International Congress met, by going East a little early I was able to take in a goodly part of that programme, with much profit. To see the display of hospital equipment alone is well worth a trip across the continent.

DETAILS OF CLINICAL WORK.

The total number of examinations was 518, of which 40 were re-examinations, making 478 cases examined. Two hundred and forty of these I have classified as non-tubercular. Of the balance, 238, 184 are classified as positively tubercular and 54 suspects. Of the 40 re-examinations, many of them were amongst the positive cases and were re-examined to learn of progress of the disease. Others were re-examined in order to more definitely classify case as positive or negative. While my work is essentially diagnostic, every year I am asked to advise more and more as to treatment and disposal of cases.

The further classification I have confined to the positive and suspect cases, instead of all cases examined as in previous years. Of the 238 such cases, 118 are males and 120 females. Eighty-nine were born in British Columbia, sixty-two in the other Provinces of Canada, 54 in British Isles, 9 in United States of America, and 24 in other countries. Considerably over half, then, of the cases were born outside of British Columbia. Their length of residence in the Province varies from many years to two months, and while my data are not complete, quite a goodly number have been in the Province less than two years, some coming in after being diagnosed.

THE EDUCATIONAL PART OF THE WORK.

While there has been an increase in the clinical work, the educational part has not been neglected. Meetings have been addressed as follows: Vernon, under auspices of Women's Institute, also high-school pupils in same town; a joint meeting with Dr. Lapp in Victoria under Tuberculous Veterans' Association auspices, with Dr. Young as chairman; also one under Women's Institute of Victoria; Health Bureau, Board of Trade, Vancouver; Public Health Nursing class, University of British Columbia; at Duncan, under Cowichan Public Health Nursing Service; at Chemainus, under Ladies' Hospital Auxiliary; and nurses in training at Nanaimo, Hazelton, Nelson, Cranbrook, Kelowna, and St. Joseph's, Victoria.

INDIAN SURVEY.

The Indian survey, under the joint auspices of the Federal Department of Indian Affairs and the Canadian Tuberculosis Association, working through a Provincial Advisory Committee of which Dr. Young is chairman, is being continued this year. Having completed the survey of Coast Indians last year, a similar survey is being carried on amongst the Indians of the Interior.

As a representative of the Provincial Health Department, I accompanied Drs. Vrooman and Hill on a trip of inspection through the Okanagan, Kamloops, and Nicola Valley Districts. On this trip 359 Indians were examined, including in many cases entire families. While this Interior survey is not complete, indications are that the incidence of tuberculosis amongst them does not materially differ from that found last year amongst Coast Indians. The percentage of cases found amongst Indians compared with the percentage we believe to exist amongst the white population runs in about the same proportion as deaths amongst Indians compared with deaths amongst whites, the latter of which will be seen in tables below.

It is often asked, "Is any progress being made in the fight against tuberculosis?" "Is it not a fact that the deaths per 1,000 of population is practically stationary, and, in fact, is higher in British Columbia than in any of the Provinces west of Quebec?" To answer these questions intelligently there are certain facts that have to be taken into consideration. First of these is that out of a total Indian population in the Dominion of 100,000 in round numbers, British Columbia has over 25,000, or one-fourth of the total, and the death-rate amongst these people is eight or nine times that amongst the whites. Again, we are the only Province in which there is any considerable population of Orientals, and the death-rate amongst these is also inordinately high. In order to show this effectually, I asked Mr. H. B. French, of the Vital Statistics Department, to segregate these different classes for the last five years. The tables below set out the results very clearly. It also demonstrates very clearly that amongst the white population during that period there has been a very steady and appreciable decrease in the percentage of tubercular deaths, and leaving out Indians and Orientals, which does not materially affect other Provinces, we have a condition here that we have reason to be proud of. This result is attained without taking into consideration the fact that many people, both civilian and ex-service, come to the Province on account of our climate when overtaken with poor health.

Chinese, British Columbia.

Year.	Deaths from Tuberculosis.	Deaths, all Causes.	T.B. Rate per Cent., all Deaths.	Chinese Population.	T.B. Rate per 1,000 Population.
1921	49	220	22.26	23,533	2.08
1922	64	232	27.58	23,533	2.72
1923	44	228	19.29	23,533	1.87
1924	40	211	18.95	23,533	1.70
1925	44	195	22.56	23,533	1.87
1926	59	224	26.34	23,533	2.55

British Columbia Indians.

Year.	Deaths from Tuberculosis.	Total Deaths, all Causes.	Rate per Cent., all Deaths.	Indian Population.	Rate per 1,000 Population.
1921	104	364	28.57	25,694	4.05
1922	99	370	26.76	24,744	4.00
1923	133	432	30.79	25,694	5.18
1924	125	457	27.35	25,694	4.86
1925	155	436	35.55	24,316	6.37
1926	145	416	34.85	24,316	5.96

Japanese, British Columbia.

Year.	Deaths from Tuberculosis.	Deaths, all Causes.	T.B. Rate per Cent., all Deaths.	Japanese Population.	T.B. Rate per 1,000 Population.
1921	33	142	23.24	15,006	2.19
1922	22	190	11.58	15,806	1.38
1923	24	158	15.19	16,004	1.49
1924	23	150	15.33	17,418	1.32
1925	33	195	16.92	18,226	1.81
1926	28	161	17.39	19,048	1.47

Races other than Chinese, Japanese, and British Columbia Indians.

Year.	Deaths from Tuberculosis.	Deaths, all Causes.	T.B. Rate per Cent., all Deaths.	Population.	T.B. Rate per 1,000 Population.
1921	326	3,846	8.47	460,349	0.70
1922	322	4,115	7.82	474,917	0.67
1923	324	4,179	7.75	478,769	0.67
1924	339	4,186	8.09	486,355	0.69
1925	306	4,119	7.42	494,925	0.61
1926	300	4,673	6.42	501,103	0.59

British Columbia, all Races included.

Year.	Deaths from Tuberculosis.	Deaths, all Causes.	T.B. Rate per Cent., all Deaths.	Population.	T.B. Rate per 1,000 Population.
1921	512	4,572	11.19	524,582	0.97
1922	507	4,907	10.33	539,000	0.94
1923	525	4,997	10.50	544,000	0.96
1924	527	5,004	10.53	553,000	0.95
1925	538	4,945	10.87	561,000	0.95
1926	532	5,474	9.72	568,000	0.93

HOSPITAL INSPECTION.

As Hospital Inspector, I have inspected twenty-seven public hospitals and thirteen private hospitals, reports on most of these being made directly to the Provincial Secretary's Department.

I visited two towns where the question of establishment of hospitals was being considered, as well as other special investigations.

I attended one Hospital Society meeting, at which the elective board was reduced from fifteen to five members, the annual fee cut from $5 to $2, and a by-law passed making it illegal for directors to have contracts with hospital boards. I met with eight hospital boards and, where full meetings could not be arranged, have met with some member or members of the executive in twenty cases.

I attended sessions of the Provincial Hospitals Association, also, as mentioned before, the American Hospital Association at Atlantic City, and in May the meeting of the Hospital Section of the Pacific North-west Division of the American College of Surgeons at Seattle.

There has been great activity throughout the year in planning and completing hospital extensions, including infectious-disease departments, nurses' homes, etc. These extensions were always associated with a request for special grant from the Government and universally received favourable consideration.

I have received many expressions of appreciation of the action of the Government in planning extensions at Tranquille. The extra accommodation for tuberculosis provided at the General Hospital, Vancouver, did much to relieve the overcrowding temporarily, as did also the opening of Vernon Villa by St. Joseph's Hospital, Victoria, but the addition is still needed to avoid overcrowding permanently.

The 1925 amendment to the "Hospital Act" has done much to assist the hospitals financially, and I believe it has worked no hardship on municipalities, being very fair to them. Most of the hospitals outside of the larger centres are still working on a flat rate, rather than the 70 cents per day per patient.

There have been no cases during the year referred to Arbitration Board for decision, which would seem to bear out the opinion expressed above that provisions of Act are fairly satisfactory.

In closing, I would like to express my appreciation of the cordial co-operation and valuable advice I have received from you on all occasions; also to the doctors, nurses, and lay organizations throughout the Province; to Miss Randal, of the Graduate Nurses' Association, I extend my sincere thanks.

I have, etc.,

A. S. Lamb, M.D.,
Travelling Medical Health Officer and Hospital Inspector.

REPORT ON MEDICAL INSPECTION OF SCHOOLS.

PROVINCIAL BOARD OF HEALTH,
VICTORIA, B.C., November 30th, 1927.

The Honourable William Sloan,
Provincial Secretary, Victoria, B.C.

SIR,—Herewith I beg leave to hand you the Sixteenth Annual Report of the Medical Inspection of Schools for the Province of British Columbia.

The work of our Department as a whole is making very satisfactory progress, and we have been pleased to call your attention to the advances in respect to the different departments, but I feel that, in reporting as to the work of the medical inspection of the schools, we can show more real advance and more accomplishment, with the result of greater interest being taken by the parents and public in general, than in any other department.

Our Nursing Service is increasing and the number of nurses at present connected with our work is upwards of forty, a remarkable increase in the past five years, when we began with one nurse. The soundness of our policy in the establishment of the Nursing Service is borne out by the results as shown in the schools. We are now busy coping with the requests that are coming in for extension of our Service, and it is becoming less and less incumbent upon us to make an effort to induce the people to consider our Service. The improvement of the general health of the children; the improvement in their class-work; the curing of a large number of defects; the institution of dental clinics; the carrying-on of classes in health; and the teaching of health habits to the children; all have been making remarkable progress.

In my general article on the progress of the Department I have mentioned more particularly the inclusion of our nurses as teachers of health in the schools. This has been done at the request of the trustees, and on their own initiative, and is, I consider, a most significant procedure on their part as indicating their greater knowledge of the subject and their observation of the results which have been obtained so far.

We have increased the number of our dental clinics and have applications from several other points for the establishment of the dental work.

The most significant change is the increasing control we have over epidemic diseases. During last summer we had several meetings of the School Medical Officers and Medical Health Officers, and have formulated new regulations in regard to the management of the schools in the event of any infectious disease showing, that are working a very great benefit in regard to the control of such epidemics, but particularly in preventing interruption of school-work.

We found that, when children were excluded or the home was quarantined, it was difficult to enforce, as many of these pupils were very anxious to receive the honour roll for perfect attendance from the Education Department. This led to children returning too early, with consequent spread of the disease and also injury to themselves from the fact that they had not recovered sufficient strength to return. Parents and children alike were anxious that they should get the honour roll, and no allowance was made by the Education Department for being absent on account of quarantine. Representation was made to Dr. Willis, the Superintendent of Education, and he very kindly consented to make such arrangements and has written us a letter, which I append:—

"BRITISH COLUMBIA DEPARTMENT OF EDUCATION.
"OFFICE OF THE SUPERINTENDENT,
VICTORIA, B.C., August 18th, 1927.

"*Dr. H. E. Young,*
Provincial Health Officer, Victoria, B.C.

"DEAR DR. YOUNG,—In reply to your letter of the 12th instant, I may say that this Department is pleased to approve of your suggestion that honour rolls be granted to every pupil who is absent through illness or quarantine, for one or more days in any year, provided

the actual number of days he is in attendance in the year, increased by the number of days he is absent through illness or quarantine, equals or exceeds the total days' attendance made by the pupil of the school, or class, with the best showing in the matter of punctuality and regularity, and provided also he secures a statement from a School Nurse, Public Health Nurse, School Health Inspector, or other physician, certifying that absence from school was due to illness or quarantine.

"Yours very truly,

"(Sgd.) S. J. Willis,
Superintendent of Education."

Last year I had the pleasure of publishing a report made by Dr. Maxwell, Medical Inspector of Schools for Ladysmith, and I am very pleased indeed to supplement that report with a later report which he has given me for the present year. You will note his comment in this of the effect, owing to some local difficulties, of cessation of the dental clinic. The result of this backward step became very noticeable and the clinic is being resumed at that point.

I wish to congratulate Dr. Maxwell on the splendid work which he is doing in connection with the schools.

"Ladysmith, B.C., July 9th, 1927.

"*The Board of School Trustees,*
Ladysmith, B.C.

"Dear Sirs,—In presenting to you my fourth report on the examination of the schools, I am glad to say that the satisfactory condition which existed last year is again maintained.

"Public School.

"*Malnutrition.*—Last year there were 28 underweight; this year there are only 23. This can, I think, be attributed to the special instruction given by Miss Hewertson and the interest taken by the children in watching their weight.

"The other day I met three little children coming out of school and I asked them if they had been having exams. They said, 'Yes.' I said, 'What marks did you get?' One said, 'I was 72 and last time I was only 68! I have gained 4 lb.!' and her face was radiant. The other two were equally pleased and all were obviously more enthusiastic over their physical than their mental development.

"*Defective Vision.*—This refers to those cases which have not been corrected by glasses. Last year there were 17; this year only 9.

"*Adenoids and Tonsils.*—Grouping the two together, there were 136 cases last year and this year there are only 52. Very soon there will be no children in Ladysmith with enlarged adenoids and unhealthy tonsils.

"*Defective Teeth.*—Last year there were 67 children with defective teeth; this year there are 173. Of these, 93 are cases where the primary teeth only are affected.

"I think it is most instructive that in 1925 there were 153 cases of defective teeth; then in 1926 there was a dental clinic and at the time of my examination there were only 67 cases of defect. The dental clinic was stopped and this year there are 173.

"I feel sure that, if a satisfactory arrangement can be made, the starting again of a dental clinic will not only make a material difference to these figures, but will be greatly to the advantage of pupils and parents alike.

"*Goitre.*—There has been a great improvement in this condition since last year, when there were 31 cases of enlarged thyroid. This year there are only 2 bad cases, 8 slight, and 14 very slight.

"There were no cases of any infectious or contagious disease.

"I would like again to draw the attention of the trustees to our health report.

"My annual health report to the Provincial Health Officer commences on July 1st and ends on June 30th. During the last period there was only one case of an infectious disease, coming under the 'Infectious Diseases Act,' and that was a case of erysipelas. This indeed constitutes a record and beats last year's previous record.

"This year we had, as you know, a mild epidemic of smallpox in the vicinity. We were fortunate in only having two cases in Ladysmith.

"High School.

"The only comment on this school which is of interest is again the subject of teeth. Last year there were 52 children with perfect teeth and 16 with defective teeth. This year there are only 47 with perfect teeth and 20 with defective teeth.

"Yours faithfully,

"(Sgd.) H. B. Maxwell,
Health Inspector."

QUEEN ALEXANDRA SOLARIUM.

Last year we published the first report issued by the Solarium, which explained fully the objects of the institution. The patients had not been received at the time of this report.

I am very pleased indeed to publish the following report of Dr. Cyril Wace, Medical Superintendent, of the progress that has been made since patients have been admitted.

The work carried on there is in the very best of hands. Dr. Wace has given up all other work to assume the office of Physician in Charge, and under his able management the results are just what we expected and a description of the work as carried on follows.

The following is a full report of the Solarium:—

"*H. E. Young, M.D., C.M., LL.D.,*
Provincial Health Officer, Victoria, B.C.

"Dear Sir,—A year ago you very kindly asked me to send you a report on the progress we were making in the establishment of the Queen Alexandra Solarium for Crippled Children at Malahat Beach, V.I.

"This year I am glad to be able to inform you that the Solarium has been in active operation since March 1st, on which date the first children were admitted for treatment. Sixty-six children have been under treatment and there are to-day (November 30th) thirty-eight patients in the Solarium. Two more will shortly be admitted and twenty-three further application forms for admission have been received.

"We can accommodate forty children through the winter and about forty-five in the summer.

"In the annual report which will be submitted to the directors of the Solarium early next year full details of the cases treated will be given. I will, therefore, now only touch on some of the more general and important aspects of this work.

"The value of the Solarium in the treatment of the delicate or pre-tubercular child has been amply proved; fifteen such cases have been or are now under treatment and the results in every case have been most satisfactory.

"Nearly one-half of our patients are suffering from tubercular or other infection of bones, joints, spine, or lymph glands, and some of these are of years' standing. Thirteen are cases of old or recent infantile paralysis or anterior poliomyelitis.

"The outstanding feature of many of these cases (forty-one in all) is the marked deformity that is present, and while this may be very difficult to avoid in certain cases of arthritis or tubercular disease, it cannot be too often emphasized that, although partial or complete paralysis of a limb or limbs or group of muscles is often inevitable, physical deformity need not occur in cases of infantile paralysis. Such deformities are due either to the activity of unaffected muscle groups in the limb overstretching the partially paralysed and unsupported groups, or to the effect of body-weight on a partially or completely paralysed limb which is not sufficiently braced in the correct alignment of the body as a whole.

"We have had only two cases of congenital deformity in the sixty-six admitted, which bears out the statement that 'the cripple is made, not born.'

"I would call attention to the great value of the regular daily school which is held in the Solarium for all children, whether ambulant or bed cases.

"It is to me increasingly evident that we must in time develop a scheme of technical training in some trade or handicraft for those boys and girls who can never be physically fit for the

ordinary routine and work of life. This is the more necessary in view of the marked bodily deformities and extensive paralysis of limbs we are seeing amongst our patients. Our accommodation does not allow of our admitting boys over 12 and girls over 14 years of age; several applications for admission of older children and adults have been received.

"Applications for admission have been received from Alberta and Saskatchewan, and I am more than ever of the opinion that the site of the Solarium and climatic conditions at Malahat Beach offer great opportunities in the restoration of health for children from our Prairie and Eastern Provinces.

"Our definition of a crippled child does not refer only to the child with a physical deformity, but includes any child of suitable age whose 'normal physical activities' are restricted by illness, accident, or from birth. Chronic cardiac disease in childhood benefits markedly by the prolonged rest and open-air life at a Solarium.

"Thanks to the generous support the Solarium has received, it has been possible to increase our facilities for treatment by the construction of a large sea-water bathing-pool and the installation of the most modern type of violet-ray lamp.

"I wish to call attention to the following points in the organization of our work:—

"No child suffering from tubercular disease of the lungs can be admitted. No mentally defective child or one suffering from fits can be admitted. Acute cases of illness or children requiring operation are not accepted; such cases are better in our general hospitals, but as soon as the convalescent stage is reached the Solarium is an ideal place for the after-care and treatment.

"No child is admitted except at the request of the doctor in charge of the case, and the Medical Superintendent will at all times welcome the advice and co-operation of the family physician.

"Our consulting medical and surgical staff are always most willing to help us with their experience and advice.

"The general health of the children has shown great improvement and a considerable gain in weight has been a marked feature in almost all cases.

"I have already referred to the great need of a thorough scheme of technical training for the physically disabled and incurable child to establish him in helpful and remunerative work and save him from a lifetime of dependence on others. No work for the crippled child can be complete or satisfactory that does not recognize an ideal which may be summed up in the words 'get him early and see him through.'

"I have, etc.,

"C. Wace,
Secretary and Medical Superintendent, Queen Alexandra Solarium."

This is the first report which shows results, and it will, I know, be very pleasing to the members of the Women's Institutes to read this and to find that their efforts are bringing health and happiness to many children who, without this, would have been condemned to a lifelong misery. They are being brought back to that heritage that belongs to all children—health, the right and ability to work—making a marked contrast to the dreary outlook of a helpless cripple, with all hope of enjoyment in life absolutely denied.

OPEN-AIR SCHOOLS.

"Preventive measures" is the key-note of all our work in connection with the children, and this is being carried on through different agencies, and the results obtained in the open-air schools, which are under the management of Miss Elizabeth Breeze, Head School Nurse of the Vancouver schools, are demonstrating the benefits of the application of natural methods in correcting defects.

Last year we published the first report of the open-air schools as carried on in Vancouver, and I am very pleased to supplement that by a report which we have received from Miss Breeze for the work during the past year. Miss Breeze says in her covering note to us that "they do feel that the school is highly beneficial to the pupils and good results are being secured."

"Open-air School, Vancouver, B.C.

"The open-air school has now been in operation for a year and a half, and we feel it has passed the experimental stage and that the results obtained demonstrate very tellingly its value to the school system and the community. As the number that can be cared for in the school is small, our policy is to return the children to the regular class-rooms as soon as their improved condition warrants it, thus giving opportunity to others. With this in view, all the pupils were given a complete physical examination at the beginning of the year, with the result that twenty-two, almost one-third of the school, were recommended for return to the regular class-room. In addition to these, ten pupils left the city and one entered high school. These vacancies were filled from the children on the waiting-list and thus we started the year with about 50 per cent. new pupils.

"The pupils are selected by the School Medical Officer and are children found to be in poor physical condition, severely run down, undernourished, and generally debilitated. No open case of tuberculosis is permitted in the school, though contacts are received. In order that children have every chance, all remediable defects receive treatment before pupils are enrolled; thus all possible handicaps are removed and they are free to gain.

"The school programme has been followed as originally planned, with a few slight variations. The mid-morning and mid-afternoon nourishment, the hot meal at noon, the supervised rest-hours, the organized play and special physical exercises, and the effort made to secure good home co-operation have all done their part in contributing to the results secured. Special emphasis is placed on health education and its application to daily life. This we feel is most essential if our work is to carry over into adult life.

"During the year eighty-nine children attended the school. The following indicates the nationalities from which they were drawn: English, 45; Scotch, 13; Irish, 3; Canadian, 23; Italian, 1; Swedish, 1; Polish, 1; French, 1; American, 1.

"Only two pupils showed a loss of weight during the year. One of these had a heart condition and had been in the school a short time when the report was made. The other child also was in for so short a time that we felt a fair trial was not made.

"The following is the term report:—

Number of pupils	89
Diagnosis—	
Malnutrition	41
Anæmia	17
Enlarged glands	1
Family case	5
Pre-tubercular	4
Other causes	21
Number gaining	87
Number losing	2
Total gain (lb.)	514
Total loss (lb.)	4½
Average gain (lb.)	5¾
Largest gain (lb.)	18¾
Largest loss (lb.)	2½
Number physically benefited	89

"Our enthusiasm for our open-air school is still great and we feel that it is doing the work for which it was planned and, though small, is giving to many a chance for a healthy, happy life which would otherwise probably be denied them."

The reports of the school medical examination show that there were 8,232 more pupils examined than last year.

Details of the examination for each school follow.

I have, etc.,

H. E. Young,
Provincial Health Officer.

SCHOOLS INSPECTED.

Medical Inspectors: 160.
Reports from Medical Inspectors: 160.

High Schools.

High Schools. 1925–26, 71: Reported, 43; not reported, 28. 1926–27, 73: Reported, 50; not reported, 23.
Pupils inspected: 1925–26, 7,861; 1926–27, 9,368, an increase of 1,507.

Graded City Schools.

Cities. 1925–26, 33: Reported, 29; not reported, 4. 1926–27, 33: Reported, 33; all reported.
Pupils inspected: 1925–26, 35,653; 1926–27, 39,882, an increase of 4,229.

Rural Municipality Schools.

Municipalities. 1925–26, 26: Reported, 24; not reported, 2. 1926–27, 26: Reported, 25; not reported, 1.
Pupils inspected: 1925–26, 26,547; 1926–27, 28,130, an increase of 1,583.

Rural and Assisted Schools.

Schools inspected: 1925–26, 616, at a cost of $14,120.75; 1926–27, 657, at a cost of $15,245.
Schools not inspected: 1925–26, 83; 1926–27, 56.
Pupils inspected: 1925–26, 16,748; 1926–27, 17,661, an increase of 913.
Cost of inspection per pupil: 1925–26, 84 cents; 1926–27, 86 cents.
Percentage of defects: 1925–26, 100.65; 1926–27, 101.97, an increase of 1.32.

STATISTICAL TABLES.

NORMAL

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Vancouver	Lachlan Macmillan		201	207	3	...	5	4	5	13	24
Victoria	A. E. McMicking		133	133	....	....	25	....	....	....	5

HIGH

Abbotsford	T. A. Swift		43	37	1	...	....	....	....	....	5
Burnaby:											
Burnaby, North	J. G. McCammon		139	135	....	...	4	...	...	2	9
Burnaby, South	"		291	280	....	....	13	1	....	3	18
Chilliwack	J. C. Elliot		229	232	1	....	11	36	5	7	50
Coalmont	E. Sheffield		10	10	....	....	....	....	2	4	2
Courtenay	J. McKee		67	60	....	....	8	...	...	11	11
Cranbrook	G. E. L. MacKinnon		156	155	....	..	18	....	....	....	9
Cumberland	G. K. MacNaughton		44	44	4	...	....	2	1	..	3
Delta:											
King George V	A. A. King		71	71	2	....	6	1	....	3	5
Esquimalt	J. S. McCallum	Miss Morrison	74	74	....	...	....	....	1	1	5
Fernie		Miss J. Dunbar	120	120	16	...	2	....	....	....	13
Grand Forks	W. Truax		85	85	....	....	3	....	...	1	3
Granby Bay	D. R. Learoyd	Miss A. J. Duncan	32	32	3	....	2	....	1	....	8
Kamloops	M. G. Archibald	Miss J. Campbell	190	188	32	...	5	....	..	1	12
Kelowna	W. J. Knox		116	110	2	....	6	1	2	1	4
Kimberley	D. P. Hanington		33	33	...	....	2	....	1	1	2
Ladysmith	H. B. Maxwell	Miss Hewertson	76	76	7	...	3	...	....	....	2
Langley	B. B. Marr		88	64	....	....	5	....	....	....	3
Maple Ridge:											
Maclean	G. Morse		77	71	....	....	3	....	....	...	5
Matsqui:											
Dennison	T. A. Swift		17	14	....	....	....	....	....	....	....
Matsqui	"		34	31	...	....	4	....	....	...	1
Merritt	G. H. Tutill		59	56	....	....	1	....	....	....	4
Mission City	A. J. Stuart		65	57	2	....	6	....	1	6	10
Nelson	E. C. Arthur		231	231	....	....	35	7	1	1	28
Nanaimo	W. F. Drysdale	Miss M. E. Kerr	242	237	12	....	29	11	11	8	54
New Westminster:											
Duke of Connaught	D. A. Clark	Miss A. Stark	357	357	10	..	14	....	....	4	40
Ocean Falls	A. E. H. Bennett		26	26	2	....	1	....	....	....	1
Peachland	Wm. Buchanan		20	20	....	....	5	1	....	..	2
Point Grey:											
Lord Byng	W. Dykes	Mrs. C. M. Hyde	241	255	5	...	19	...	....	....	13
Magee	"	Miss M. Ewart	538	516	32	....	57	2	2	2	
Prince of Wales	"	"	237	229	12	....	19	....	....	....	5
Port Coquitlam	W. Sager		45	43	3	....	2	....	....	....	7
Prince George	C. Ewert		67	65	1	...	10	...	1	1	5
Revelstoke	J. H. Hamilton		175	170	....	...	7	....	1	1	6
Richmond:											
Bridgeport	W. K. Hall		90	90	2	....	....	....	2	....	5
Rossland	J. H. Palmer		99	92	....	....	7	...	1	1	4
Salmon Arm	Alan Beech		96	79	8	....	17	2	1	1	6

SCHOOLS.

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
39	3	23	Eczema, 8; cardiac, 5; nervous break-downs and chorea, 10	....	....	....	....	Scarlet fever, 1	Good	Yes.
7	...	17	Acne, 2	....	....	....	....		Excellent	"

SCHOOLS.

12	....	8	Cardiac, 1	...	....	.	....	Measles	Good	Adequate.
36	1	13	Corrected vision, 8	....	....	....	....		"	Yes.
66	2	29	Corrected vision, 27	....	...	....	...		"	"
32	4	49	Purulent ear, 2; closed eustachian, 1; congenital short femur, 1; infant paralysis, 1	....	....	....	....		First class	Good.
1	....	...		...	....	....	...		Old building repaired	Clean.
5	....	14	Orthopædic, 1	....	...	....	...	Chicken-pox, 3; whooping-cough, 3	Crowded; poorly ventilated	O.K.
4	....	13	Cardiac, 2	....	...	....	....		Good	Clean.
10	4	1	Skin-disease, 2; nasal obstruction, 2		....	....	....		O.K.	Clean; adequate.
2	2	15		....	....	..	....	German measles, 34	Good	Clean.
8	...	2		....	...	....	....		Not crowded; well ventilated and heated	Clean; adequate.
30	....	23		....	..	....	....		O.K.	O.K.
6	1	1		....	....	....	....		Good	Clean; adequate.
8	26	19	Old fractured dislocated lumbar area	....	....	...	....	Measles, 2	Satisfactory	"
34	4	37		....	....	....	...	Mumps, 4; German measles	Basement rooms poorly ventilated	Excellent.
6	1	7	Cardiac, 3; lungs, T.B.; bronchitis, chronic, 2; curvature of spine, 1; flat feet, 3; chorea, 1; dysmenorrhœa, 3	....	....	....	....	Chicken-pox, 4; German measles, 8	Excellent	Modern; adequate; sanitary.
2	....	1		....	....	...	....	Rubella	Should have a separate janitor	Clean; adequate.
20	...	1	Orthopædic, 1	....	....	....	....		Efficient	Yes.
3	3	...		....	....	....	....	Measles, 14	Good	
7	....	....		....	....	....	....		"	Clean.
4	....	1		....	....	....	....			Yes.
7	..	1		....	....	..	..			"
9	...	7		....	....		....		Satisfactory	"
8	2	6		..	....	....	....	Measles, 8	Very satisfactory	Clean; adequate.
48	....	89	V.D.H., 3	....	....	....	....		Good	Yes.
114	8	19	Anæmia, 1; asthma, 2; catarrh, 4; postural defects, 5; deviated septum, 1; appendicitis, 2	...	....	2	....	Vaccinated, 202; smallpox, 5	Heating fairly good; no overcrowding; ventilation good	Adequate; clean.
41	6	69	Orthopædic, 4; heart, 14; pulmonary, 1; nervous, 1; anæmic, 2	....	...	....	...			
1	2	5	Cardiac, 4	...	....	....	....		Excellent, well ventilated and heated	Clean; adequate.
2	....	18		....	....	....	..		Satisfactory	"
40	2	...	Adolescent goitre, 72; cardiac, 14; orthopædic, 11; anæmia, 1	...	....	1	....	Diphtheria, 1; German measles, 23	Good	Good.
64	4	....	Adolescent goitre, 119; nervous, 1; cardiac, 28; orthopædic, 24; anæmic, 5	....	1	3	....	German measles, 90	"	"
16	3	....	Adolescent goitre, 55; cardiac, 12; anæmic, 4; orthopædic, 9	...	1	..	....	Mumps, 1; German measles, 35	"	"
6	....	4		....	....	....	....		Satisfactory	Clean; adequate.
9	1	18	Orthopædic, 1; cardiac, 1	....	....	....	....		Good	"
....	...	7	Orthopædic, 1	....	....	....	..	Scarlet fever	Excellent	Excellent.
1	....	10		....	....	....	..	Measles, 5; roetheln, 10	Crowded	Clean.
23	6	21	Cardiac, 2	....	....	....	....		Good	Good.
6	1	4	Pulmonary, 1	....	....	....	....	Influenza	Excellent in every way	Clean; adequate.

HIGH

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Smithers	C. H. Hankinson		23	23	....	..	1	1	1	....	4
Surrey	F. D. Sinclair.		150	133	....	....	4	....	....	....	3
Trail	F. S. Eaton		240	240	11	....	16	2	4	....	6
Vancouver:											
Britannia	H. White.	Miss M. Campbell.	767	798	....	..	2	....	....	....	....
King Edward	"	"	724	766	....	....	9	1	....	....	4
King George	"	"	424	503	....	....	12	....	....	....	2
Kitsilano	"	"	464	426	....	....	9	....	....	....	5
School of Commerce	"	"	485	504	....	....	2	2	....	....	1
Technical	"	"	398	187	....	....	6	1	....	....	6
Vancouver, South:											
John Oliver	G. A. Lamont	Miss E. Edwards..	836	833	....	....	34	....	....	....	8
Vancouver, North	H. Dyer		335	251	2	....	31	2	18	18	18
Vancouver, West	F. Stainsby		125	125	..	....	2	....	....	....	25
Vernon	G. Williams	Mrs. S. Martin	140	134	....	..	....	....	....	....	....

GRADED CITY

Alberni	A. D. Morgan.		118	113	....	....	....	....	....	1	22
Armstrong		Miss P. Charlton..	547	557	41	7	34	16	3	40	89
Chilliwack	J. C. Henderson		314	334	8	25	24	....	21	48	46
Courtenay	J. McKee		263	243	2	1	20	....	3	96	96
Cranbrook:											
Central	G. E. L. MacKinnon		600	578	....	....	38	....	....	....	91
Kootenay Orchards	"		13	13	....	....	1	....	....	....	5
South Ward	"		55	55	..	....	2	....	....	..	22
Cumberland	G. K. MacNaughton		464	444	105	6	61	8	20	18	115
Duncan	H. N. Watson	Miss I. Jeffares	453	437	36	5	31	3	40	46	90
Enderby	H. W. Keith		151	125	....	....	19	..	6	6	35
Fernie:											
Annex		Miss J. Dunbar	68	68	4	....	1	1	6	6	8
Central		"	560	560	106	1	32	3	14	14	142
Fernie, West		"	64	64	2	1	1	1	3	3	10
Grand Forks	W. Truax		306	306	2	1	10	1	16	8	30
Greenwood	A. Francis		80	78	....	....	5	....	....	1	13
Kamloops:											
Lloyd George	M. G. Archibald	Miss J. Campbell	283	281	52	....	4	2	....	3	32
Stuart Wood	"	"	458	453	108	....	4	4	....	2	49
Kaslo	D. J. Barclay		125	122	....	2	11	....	18	18	29
Kelowna	W. J. Knox		695	652	36	8	23	6	29	19	26
Ladysmith	H. B. Maxwell	Miss Hewertson...	329	329	23	1	9	4	5	11	41

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
2	1	2	.....	....	....	....	....	.....	Good.....	Yes.
....	1	15	Endocarditis, 1.....	...	....	....	....	Measles, rubella	Satisfactory	Good.
13	6	23	Cardiac, 3; pulmonary, 1.....	...	....	...	....	... .	Good.....	Yes.
241	....	14	Vaccinated, 495; cardiac, 1....	....	....	....	...	Scarlet fever, 2; measles, 2; German measles, 45; chicken-pox, 3	.....	....
204	....	11	Vaccinated, 491; cardiac, 1....	....	....	...	....	Diphtheria, 1; measles, 10; German measles, 25	.....	.....
112	....	9	Vaccinated, 298.....	..	....	....	....	Diphtheria, 1; measles, 6; scarlet fever, 1; German measles, 16	.....	. .. .
103	....	6	Vaccinated, 286; cardiac, 1....	....	....	....	...	German measles, 27; measles, 2	.....	.....
155	...	6	Vaccinated, 304.....	....	....	....	....	Mumps, 2; measles, 2; German measles, 18	.....	.....
70	...	5	Vaccinated, 106.....	....	....	....	....	Scarlet fever, 2; German measles, 6	.....	.....
193	1	33	Vaccinated, 2; home visits, 2..	....	....	1	....	Scarlet fever, 2; measles, 4; rubella, 48; mumps, 1	Heating fair	Satisfactory.
17	....	26	Exophthalmic goitre, 2; respiratory disease, 1	....	....	2	....	No epidemic.....	Good.....	Clean; adequate.
50	45	1	Cardiac, 1	....	....	9	2	.....	"	Yes.
1	....	4	Pulmonary, 1; cardiac, 1; nervous, 2	....	....	....	....	Influenza 12; mastoid, 1	Excellent....	Clean; adequate.

SCHOOLS.

47	..	33	....	....	..	....	....	....	Good.	Good.
202	21	162	Chorea, 4; cardiac, 2; Bright's disease, 1; toxic goitre, 2; congenital deformity of hip-bone, 1; harelip and cleft palate, 1	8	6	2	4	Mumps, 20; German measles, 1	Heating and ventilation good; adequate space	Adequate; clean.
35	...	49	....	....	....	....	....	.....	Good.	O.K.
107	....	33	Cardiac, 2; orthopædic, 1.....	...	....	....	....	Smallpox, 4; measles, 12	Crowded; poorly ventilated	"
79	....	19	Cardiac, 2.....	....	....	....	....	....	Good.....	Clean.
1	....	....	....	....	....	....	....	....	"	"
10	....	..	....	....	....	....	....	....	"	"
328	183	3	Pulmonary, 2; wax in ears, 129; nasal catarrh, 48; nasal obstruction, 18; anæmia, 42; nasal infection, 1; stammering, 2; cleft palate, 3; skin-disease, 28	....	....	3	2	Measles, rubella, scarlet fever, chicken-pox	O.K.	Clean; adequate.
77	56	5	Cardiac, 4; kyphosis, 2.....	....	....	9	5	Chicken-pox, 15; whooping cough, 41; scarlet fever, 3; diphtheria, 5; conjunctivitis, 13; rubella, 7	Good.....	Clean; inadequate.
35	1	16	Mitral disease, 1	....	....	....	....	.....	"	Yes.
12	2	10	Scarlet fever, 1; measles, 3; diphtheria, 1; chicken-pox, 12	2	....	3	....	....	O.K.	O.K.
150	3	211								
6	1	12								
48	18	5	Heart-trouble, 2.....	...	....	2	1	Mumps, measles.....	Good.....	Fairly clean; adequate.
6	72	62	Cardiac, 4	....	...	....	...	Diphtheria, 2..... ...	O.K.	O.K.
66	21	31	Pulmonary, 2; orthopædic, 2; nervous, 2	....	....	..	...	Scarlet fever, 20; chicken-pox, 5; typhoid, 1; German measles	Poorly ventilated.	Excellent.
85	45	43	Cardiac, 2; orthopædic, 1.....	....	...	....	....	Scarlet fever, 29; chicken-pox, 4; typhoid, 1	.....	"
31	1	109	Asthma, 1; spine, 1; anæmia, 2; varicose veins, 1	....	....	...	....	.....	.....	Yes.
78	16	37	Chorea, 13; cardiac, 7; flat feet, 7; bronchitis, chronic, 9; pulmonary T.B., 3; curvature of spine, 5; squamous eczema of face, 11	....	....	3	1	Chicken-pox, 28; scarlet fever, 3; German measles, 21	Excellent, but most of the classrooms overcrowded	Modern; sanitary; adequate.
173	....	2	Orthopædic, 9; eczema, 2; cardiac, 4; goitre, very slight, 14	....	....	....	....	.....	Efficient.....	Yes.

GRADED CITY

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Merritt	G. H. Tutill		339	321	2	...	19	2	6	5	79
Nanaimo:											
Middle Ward	W. F. Drysdale	Miss M. E. Kerr	153	152	37	2	31	2	8	7	27
North Ward	"	"	149	148	16	1	16	1	5	12	37
Quennell	"	"	639	639	98	1	61	8	21	37	167
South Ward	"	"	69	69	13	1	9	1	2	5	15
Nelson:											
Central	E. C. Arthur		696	696	3	3	104	6	14	16	143
Hume	"		261	261	3	1	49	5	2	4	43
New Westminster:											
Central	D. A. Clark	Miss A. Stark	893	878	149	2	25	2	3	153	151
Lister-Kelvin	"	"	670	657	109	...	30	3	3	113	111
Richard McBride	"	"	510	498	80	..	16	2	2	96	95
Queensborough	"	"	101	96	14	1	8	....	1	16	16
Herbert Spencer	"	"	495	494	73	1	15	1	6	89	87
Port Alberni	C. T. Hilton		271	238	11	4	32	....	28	2	62
Port Coquitlam:											
Central	W. Sager		172	170	11	....	6	3	5	17	46
James Park	"		85	82	5	...	2	....	1	6	36
Port Moody	C. R. Symmes		281	229	4	3	7	2	12	17	28
Prince George	C. Ewert		320	312	3	4	16	9	33	33	67
Prince Rupert:											
Booth Memorial	H. E. Tremayne		415	410	....	1	10	3	....	....	27
Borden Street	"		291	282	....	...	2	...	....	....	16
Seal Cove	"		64	60	...	...	...	...	...	...	1
Revelstoke:											
Central	J. H. Hamilton		304	280	...	....	3	....	12	12	19
Selkirk	"		309	290	...	....	4	....	16	20	25
Rossland	J. H. Palmer		513	426	5	2	32	7	11	11	51
Salmon Arm	Alan Beech		192	153	23	1	45	1	1	11	61
Slocan	Wm. E. Gomm		62	61	...	....	7	....	....	....	7
Trail:											
Central	F. S. Eaton		810	719	206	3	102	21	62	36	40
East Trail	"		240	221	16	4	22	6	14	9	12
Tadanac	"		40	30	4	....	7	1	2	2	4

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
99	27	35	Cardiac, 2	4	...	2	1	Epidemic of measles, fall of 1926, about 300 cases	Satisfactory	Yes.
129	12	5	Marked pallor, 2; pyorrhœa, 1; postural defects, 2; cardiac, 1, bronchitis, 1; appendicitis, 2; vaccinated, 137	12	2	11	1	Measles, 14; smallpox, 2; scarlet fever, 1; chicken-pox, 6; whooping-cough, 1	Heating fairly good; ventilation fair	Adequate; fair.
87	30	5	Marked nervousness, 1; pallor, 2; malocclusion, 3; eczema, 1; blepharitis, 8; postural defects, 4; vaccinated, 119	2	2	19	2	Smallpox, 1; diphtheria, 1; measles, 6; scarlet fever, 2; chicken-pox, 1	Heating good; ventilation fairly good; no overcrowding	"
375	73	72	Marked pallor, 11; postural defects, 8; asthma, 1; chronic kidney, 2; bronchitis, 1; conjunctivitis, 3; pyorrhœa, 4; eczema, 2; faulty speech, 2; St. Vitus, 1; marked nervousness, 5; malocclusion, 7; vaccinated, 524; blepharitis, 31; rheumatic fever, 1; pneumonia, 2	3	5	57	1	Smallpox, 17; chicken-pox, 11; scarlet fever, 4; diphtheria 3; measles, 3	No overcrowding; heating good; fairly good ventilation	Adequate; clean.
61	7	1	Marked pallor, 2; malocclusion, 2; blepharitis, 11; nervous, 2; faulty speech, 1; vaccinated, 60	9	4	7	1	Measles, 21	Heating and ventilation good	Adequate; excellent.
419	4	286	Chorea, 1; V.D.H., 3; nervous, 1	3	3	3	....		Good	Yes.
147	....	90		....	1	3	....		All rooms somewhat overcrowded	"
449	96	96	Orthopædic, 15; heart, 20; pulmonary, 4; nervous, 2; anæmic, 6							
315	191	73	Orthopædic, 17; heart, 10; pulmonary, 1; nervous, 2; anæmic, 3							
288	160	57	Orthopædic, 14; heart, 8; nervous, 2; anæmic, 2; pulmonary, 2	...	....	....	....	Measles, 342; mumps, 10; pertussis, 6; scarlet fever, 7; chicken-pox, 10; diphtheria, 1; German measles, 38	.....	.....
60	28	6	Orthopædic, 1; heart, 1							
219	137	47	Orthopædic, 7; heart, 9; nervous, 2; anæmic, 1; pulmonary, 4							
48	4	116	Nervous twitching, 1; anæmic, 4; healed T.B., 1	....	..	...	....	Whooping-cough	Good	Yes.
29	2	7	Cardiac, 3; nervous, 2	....	...	....	..	Measles, chicken-pox	Satisfactory	Clean; adequate.
28	4	11	Nervous, 1	...	....	....	....	Chicken-pox	"	"
21	2	18	Cardiac, 3; chronic T.B. bone, hip, 2	3	11	2	....	Measles, 70; whooping-cough, 2; chicken-pox, 3; mumps, 6	Good	"
146	4	65	Blepharitis, 1; conjunctivitis, 1; cardiac, 1; orthopædic, 1, nervous, 1	....	...	...	1	Diphtheria, 1	Good, except crowded and poor ventilation in former library-room	"
6	...	21		...	....	....	....	Scarlet fever, chicken-pox, mumps	....	....
3	...	19		....	...	....	....		.....	.....
4	...	5		....	....	....	..		.....	.....
20	....	6		....	....	....	....	Measles, scarlet fever	Good	Good.
20	...	12		...	....	....	....	Measles, scarlet fever	"	"
153	45	59	Hernia, 1; cardiac, 3; orthopædic, 6	....	....	....	....		"	"
66	8	18	Cardiac, 2; pulmonary, 2	....	...	....	..	Influenza	Excellent	Clean; adequate.
....	...	7	Cardiac, 5; blepharitis, 1	...	....	....	....		Good	"
306	320	308	Cardiac, 6; chorea, 2	3	2	3	2	Measles, 220; pertussis, 2; mumps, 12; chicken-pox, 62; scarlet fever, 2	"	Yes.
56	4	26	Cardiac, 6; chorea, 2	2	5	4	2	Mumps, 6; chicken-pox, 13; measles, 22	"	"
8	1	6	Cardiac, 1	....	...	..	....	Measles, 6; chicken-pox, 3	"	"

GRADED CITY

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Vancouver:											
Aberdeen	H. White	Miss M. Campbell.	488	499	78	....	2	6	2	4	31
Alexandra	"	Miss V. B. Stevens	656	650	146	....	5	10	2	8	39
Bayview	"	Miss D. Shields	383	426	71	....	4	7	....	1	22
Beaconsfield	"	Miss I. Smith.	554	530	103	....	6	5	....	...	17
Block 70	"	Miss M. D. Schultz	110	113	4	....	1	....	....	2	7
Central	"	Miss A. McLellan	561	623	82	..	10	4	3	4	38
Dawson	"	Miss H. Jukes.	989	967	198	....	28	1	1	3	57
Charles Dickens	"	Miss O. Kilpatrick.	563	626	68	....	7	1	2	4	47
Fairview	"	Miss D. Bellamy	529	438	67	....	6	4	....	2	13
Franklin	"	Miss M. D. Schultz	404	388	80	....	4	2	2	2	24
Simon Fraser	"	Miss O. Kilpatrick	609	616	66	....	9	2	....	....	28
General Gordon	"	Miss D. Shields	814	828	134	....	3	1	1	2	30
Grandview	"	Miss L. Drysdale.	610	531	84	....	4	3	....	3	28
Grenfell	"	Miss M. D. Schultz	137	144	8	....	9	4	....	5	24
Hastings	"	"	985	867	168	...	6	1	3	7	50
Henry Hudson	"	Miss D. Shields	680	610	121	....	7	4	1	1	32

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
130	7	18	Vaccinated, 241; pulmonary, 1; cardiac, 2	....	....	....	...	Scarlet fever, 1; measles, 37; German measles, 76; chicken-pox, 5; diphtheria, 4; diphtheria carriers, 4; whooping-cough, 2	....	....
138	3	17	Vaccinated, 297.....	....	....	....	....	Scarlet fever, 4; measles, 90; German measles, 169; chicken-pox, 2; diphtheria, 2; diphtheria carriers, 3; whooping-cough, 2	....	.....
50	1	13	Vaccinated, 243.	....	....	....	....	Diphtheria, 3; German measles, 96; diphtheria carriers, 1; whooping-cough, 2; measles, 55	....	....
108	1	13	Vaccinated, 237; pulmonary, 2	...	....	....	...	Scarlet fever, 1; German measles, 102; measles, 7	....	.....
5	....	2	Vaccinated, 39; cardiac, 1.....	.....	....	...	....	Scarlet fever, 1; German measles 3; diphtheria, 1; measles, 8	....	....
113	6	25	Vaccinated, 383; pulmonary, 2; cardiac, 1	....	....	....	....	Scarlet fever, 3; German measles, 31; mumps, 4; measles, 30; diphtheria, 1; chicken-pox, 7; whooping-cough, 4	....	....
87	3	55	Vaccinated, 541; cardiac, 4....	....	....	...	...	Scarlet fever, 2; German measles, 26; mumps, 3; measles, 158; diphtheria, 2; chicken-pox, 4; whooping-cough, 18	....	....
123	3	11	Vaccinated, 345; pulmonary, 1	....	....	....	..	Scarlet fever, 4; German measles, 67; mumps, 1; whooping-cough, 9; measles, 21; chicken-pox, 59	....	....
103	...	10	Vaccinated, 225.....	..	..	....	....	Scarlet fever, 1; German measles, 18; measles, 14; mumps, 1; chicken-pox, 15	....	.....
59	....	7	Vaccinated, 202.....	....	....	....	....	Scarlet fever, 2; German measles, 6; diphtheria carriers, 4; diphtheria, 6; mumps, 1; measles, 41; whooping-cough, 1	.....	.....
101	2	10	Vaccinated, 322; pulmonary, 2	....	....	....	....	Scarlet fever, 4; German measles, 76; measles, 77; chicken-pox, 7; diphtheria, 2; whooping-cough, 1	....	.....
103	..	23	Vaccinated, 510; pulmonary, 2	....	....	....	....	Scarlet fever, 6; German measles, 127; mumps, 8; diphtheria carriers, 5; measles, 98; whooping-cough, 1; chicken-pox, 1	....	.....
76	1	20	Vaccinated, 270.....	....	....	....	....	Scarlet fever, 5; German measles, 154; measles, 47; diphtheria carriers, 1; whooping-cough, 1; chicken-pox, 2; diphtheria, 4	.....	.. ..
26	....	8	Vaccinated, 86.....	...	..	...	....	Diphtheria, 1; measles, 14; German measles, 52; whooping-cough, 1; Chicken-pox, 10	....	....
145	2	15	Vaccinated, 427; pulmonary, 2; cardiac, 1	....	....	....	....	Chicken-pox, 30; measles, 64; German measles, 180; diphtheria, 5; diphtheria carriers, 2; mumps, 6; whooping-cough, 3	....	....
120	....	13	Vaccinated, 464....	...	..	....	....	Scarlet fever, 3; measles, 23; German measles, 106; whooping-cough, 3; mumps, 2; chicken-pox, 5; diphtheria, 1	....	....

GRADED CITY

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Vancouver—*Continued.*											
Kitsilano	H. White	Miss D. Shields	457	475	53	....	4	1	....	2	31
Livingstone	"	Miss O. Kilpatrick	423	439	41	....	8	1	....	4	22
Model	"	Miss D. Bellamy	498	515	55	....	2	2	1	5	18
Mount Pleasant	"	Miss O. Kilpatrick	746	763	73	....	7	1	1	2	26
Macdonald	"	Miss L. Drysdale	689	594	85	....	2	2	....	1	31
Lord Nelson	"	Miss I. Smith	948	955	177	...	12	4	2	5	26
Florence Nightingale	"	Miss V. B. Stevens	708	685	104	...	6	2	4	7	29
Open Air	"	"	68	133	....	....	2	5	4	1	12
Cecil Rhodes	"	Miss D. Bellamy	595	493	91	...	2	2	...	5	15
Lord Roberts	"	Miss H. Jukes	961	942	213	....	22	9	....	...	57
Laura Secord	"	Miss I. Smith	624	617	101	...	3	1	3	1	33
Seymour	"	Miss L. Drysdale	927	793	100	....	4	1	....	6	66
Strathcona	"	Miss A. McLellan	1249	1279	141	...	11	1	3	10	5
Lord Tennyson	"	Miss D. Bellamy	748	692	98	....	....	4	1	4	....
Junior High	"	Miss M Campbell	184	157	...	....	...	..	....	....	..
Vancouver North:											
Lonsdale	H Dyer		453	385	19	1	26	6	59	59	59
Queen Mary	"		571	435	12	....	39	6	80	80	80
Ridgeway	"		521	519	8	2	42	11	73	73	73

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
70	....	22	Vaccinated, 238	..	...	...	....	Scarlet fever, 3; German measles, 81; measles, 49; mumps, 3; chicken pox, 7; diphtheria, 2; diphtheria carriers, 1	....	.....
88	1	15	Vaccinated, 225; pulmonary, 2; cardiac, 2	...	..	....	....	Scarlet fever, 15; chicken-pox, 11; diphtheria, 2; whooping-cough, 1; measles, 48; German measles, 63	.....	.....
149	3	8	Vaccinated, 351; pulmonary, 2	....	....	....	...	Scarlet fever, 1; measles, 25; German measles, 21; chicken-pox, 13; diphtheria, 2; whooping-cough, 2; diphtheria carriers, 1	.....	.....
161	5	25	Vaccinated, 357; pulmonary, 1	...	....	...	....	Scarlet fever, 1; measles, 66; German measles 72; mumps, 16; chicken-pox, 9	.....	.....
132	1	14	Vaccinated, 267	....	....	..	....	Scarlet fever, 1; measles, 10; German measles, 87; diphtheria carriers, 2; diphtheria, 2; chicken-pox, 29	.....	.....
207	1	15	Vaccinated, 421; pulmonary, 2; cardiac, 2	....	...	....	....	Scarlet fever, 8; measles, 47; German measles, 260; whooping-cough, 2; diphtheria carriers, 1; mumps, 2; chicken-pox, 32; diphtheria, 6	.....	.....
183	....	18	Vaccinated, 332	...	..	....	....	Scarlet fever, 1; German measles, 64; measles, 57; diphtheria carriers, 2; mumps, 24; diphtheria, 3; chicken-pox, 3; whooping-cough, 1	.....	.....
17	3	31	Vaccinated, 70; pulmonary, 2; cardiac, 1	....	....	....	....	Mumps, 9; German measles, 7; chicken-pox, 3; measles, 1; whooping-cough, 1	.....	.....
76	1	17	Vaccinated, 315	....	..	....	...	Scarlet fever, 5; German measles, 2; mumps, 1; measles, 28; chicken-pox, 12	.....	.....
60	4	21	Vaccinated, 563; pulmonary, 3	....	..	....	...	Scarlet fever, 5; German measles, 16; measles, 163; whooping-cough, 20; chicken-pox, 107; mumps, 18	.....	.....
124	.	17	Vaccinated, 287; pulmonary, 2	...	...	....	...	Scarlet fever, 2; German measles, 108; measles, 35; diphtheria carriers, 2; diphtheria, 1; chicken-pox, 2	.....	.....
202	3	29	Vaccinated, 487; cardiac, 1	...	....	...	....	Scarlet fever, 2; German measles, 101; diphtheria, 14; measles, 10; diphtheria carriers, 27; mumps, 2; chicken-pox, 2	.....	.....
271	1	25	Vaccinated, 1,136; pulmonary, 2	...	..	....	..	Scarlet fever, 1; German measles, 19; measles, 44; diphtheria carriers, 3; whooping-cough, 2; diphtheria, 5; chicken-pox, 33	.....	.....
118	2	8	Vaccinated, 402	..	....	....	....	Scarlet fever, 4; German measles, 115; measles, 60; mumps, 3; chicken-pox, 9	.....	.....
50	...	....	Vaccinated, 85	...	....	....	....	German measles, 7	.....	.....
9	5	22	Heart, 3; bronchitis, 2	5	7	3	2			
33	12	19	Early exophthalmic goitre, 2; heart, 3; respiratory disease, 6	4	5	7	2	Measles, chicken-pox, rubella	Good	Clean; adequate.
18	19	9	Asthma, 1; heart, 6; early exophthalmic goitre, 3	3	....	6	3			

GRADED CITY

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Vernon	G. Williams	Mrs. S. Martin	730	725	5	....	20	2	12	12	32
Victoria:											
Bank Street	D. Donald	Miss E. J. Herbert	137	137	....	....	....	....	....	....	....
Beacon Hill	"	Miss I. E. Adams	148	148	....	....	4	....	....	....	4
Boys' Central	"	Miss E. J. Herbert	318	318	....	1	12	2	....	....	25
Burnside	"	Miss C. Mowbray	215	215	....	....	6	....	..	1	1
Sir James Douglas	"	Miss E. J. Herbert	473	473	....	....	3	....	....	....	12
Girls' Central	"	"	381	381	....	....	8	2	1	....	15
George Jay	"	Miss I. E. Adams	476	476	....	....	25	1	....	...	14
Margaret Jenkins	"	Miss E. J. Herbert	292	292	....	....	6	...	...	...	6
King's Road	"	Miss C. Mowbray	80	80	....	....	....	....	....	....	....
Kingston Street	"	Miss I. E. Adams	139	139	....	....	2	....	....	....	7
North Ward	"	Miss C. Mowbray	369	369	....	....	15	...	....	....	....
Oaklands	"	"	546	546	....	....	8	....	1	...	5
Quadra Street	"	"	242	242	...	5	9	....	...	....	7
Quadra Primary	"	"	145	145	....	....	....	1	1	2	3
Rock Bay	"	"	20	20	....	....	....	....	.. ..	....	....
South Park	"	Miss I. E. Adams	311	311	....	....	15	....	....	...	9
Spring Ridge	"	"	139	129	....	1	3	...	....	....	6
Victoria West	"	"	315	315	....	....	6	2	1	....	7

RURAL MUNICIPAL

Burnaby:											
Armstrong Avenue	J. G. McCammon		56	54	....	....	1	....	1	1	4
Barnet	"		25	20	....	1	1	....	...	....	2
Capitol Hill	"		237	237	....	1	7	....	3	6	24
Douglas Road	"		165	165	....	....	6	....	4	5	20
Edmonds Street	"		665	644	1	2	25	1	16	23	75
Gilmore Avenue	"		746	746	2	1	25	....	19	26	95
Hamilton Road	"		30	30	....	....	....	....	....	....	3
Inman Avenue	"		203	203	3	1	8	....	4	4	22
Kingsway, West	"		597	594	2	3	18	2	17	21	72
Kitchener Street	"		175	175	....	....	3	....	6	9	23
Nelson Avenue	"		422	403	1	3	14	....	11	25	59
Riverway, East	"		81	79	....	....	3	....	4	6	11
Riverway, West	"		23	23	....	1	....	....	....	1	4
Schou Street	"		93	87	....	....	2	....	3	3	7
Seaforth	"		20	20	....	....	....	....	....	1	3
Second Street	"		84	84	....	....	1	....	....	3	12
Sperling Avenue	"		36	36	....	....	....	....	....	2	5
Windsor Street	"		161	161	....	..	7	....	5	8	20

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
75	....	52	Cardiac, 1; blepharitis, 1; stammering, 1; seborrhœa, 1	2	2	1	....	Scarlet fever, 3; measles, 3; typhoid, 2; chicken-pox, 1; influenza, 28; mastoid, 2	O.K.	Clean; adequate.
....	....	...	Pulmonary, 1	....	4	3	....	Chicken-pox, 19; whooping cough, 21; scarlet fever	Good.	"
....	...	....	Deformity of spine, 1	....	1	2	2	Measles, 7; whooping-cough, 9	"	"
...	1	....	Pulmonary, 1; cardiac, 3; nervous, 3; defect of chest, 1	....	3	3	....	Scarlet fever, 1; measles, 5; whooping-cough, 2; chicken-pox, 7	Good; more lighting wanted	"
....	....	...	Cardiac, 1	....	....	5	....	Scarlet fever, 1; chicken-pox, 17	Good.	"
....	....	2	One other deformity	1	6	4	....	Scarlet fever, 1; measles, 14; whooping-cough, 4; chicken-pox, 3	"	"
....	4	1	Pulmonary, 1; cardiac, 3; other deformities, 2	2	....	....	....	Chicken-pox, 16; whooping-cough, 4; measles, 10	"	"
....	....	4	Pulmonary, 1; cleft palate, 1; deformity of chest, 1; other deformities, 1	1	8	3	3	Scarlet fever, 2; measles, 7; chicken-pox, 2	"	"
...	....	....	Pulmonary, 1; cardiac, 1; nervous, 2	....	2	1	1	Scarlet fever, 3; measles, 12; whooping-cough, 1; chicken-pox, 1	"	"
....	....	....		....	....	3	....		Rather poor; clean	"
....	....	...	Deformity of chest, 1; other deformities, 1; cleft palate, 1	....	....	9	1	Measles, 4; whooping-cough, 1	Old building; clean	"
....	....	1		4	3	3	1	Chicken-pox, 1; whooping-cough, 1; measles, 1	Old building; clean	"
....	....	....	Nervous, 1; deformity of chest, 1	....	1	1	1	Diphtheria, 1; measles, 4; chicken-pox, 9; whooping-cough, 12	Good	"
....	....	2	Nervous, 4; deformity of leg, 1	2	....	4	...	Scarlet fever, 1; mumps, 1; whooping-cough, 1; chicken-pox, 5	"	"
....	....	....	Pulmonary, 1	1	1	3	....	Scarlet fever, 1; measles, 32	"	"
....	....	....		2	....	1	....		"	"
....	...	2	Cardiac, 4; deformity of chest, 1; pulmonary, 1; other deformities, 1	....	2	1	...	Chicken-pox, 3; whooping-cough, 1; scarlet fever, 1; measles	Old building; clean	"
....	....	....	Pulmonary, 1; other deformities, 1	....	5	3	3	Chicken-pox, 39; whooping-cough, 2; measles, 27; scarlet fever, 2	Old building; newly painted; clean	"
...	...	2	Pulmonary, 1; other deformities, 2	....	10	7	3	Scarlet fever, 1; mumps, 1; measles, 2; chicken-pox, 1	Good	"

SCHOOLS.

25	3	....		....	....	...	....		Good.	Yes.
9	...	1	Orthopædic, 1	....	....	...	....		"	"
102	24	3	Orthopædic, 1; corrected vision, 8	...	....	1	....		"	"
76	12	3	Corrected vision, 5	3	....	...	....		"	"
300	48	30	Orthopædic, 2; corrected vision, 25	....	....	1	2		"	"
343	55	22	Orthopædic, 1; corrected vision, 27; stammer, 1	....	1	....	....		"	"
14	1	1	Corrected vision, 2	....	1	....	....		"	"
95	14	10	Corrected vision, 8	1	....	....	....		"	"
279	52	13	Chorea, 1; corrected vision, 27; heart, 2	....	....	....	....		"	"
75	13	3	Corrected vision, 3	.. .	....	....	....		"	"
198	32	20	Asthma, 2; corrected vision, 11; orthopædic, 2	....	....	....	....		"	"
38	4	1	Corrected vision, 1	....	....	...	....		"	"
10	....	....		....	....	1	....		"	"
39	6	2	Corrected vision, 2	8	....	....	....		"	"
12	....	....		....	....	....	....		"	"
56	8	1		....	....	....	....		"	"
14	2	....		....	....	....	....		"	"
83	15	8	Heart 1; corrected vision, 3	....	...	....	1		"	"

RURAL MUNICIPAL

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Chilliwack:											
Atchelitz	R. McCaffrey		96	96	3	....	4	....	11	19	24
Camp Slough	L. A. Patton		29	29	1	4	...	1	4	4	5
Cheam	"		55	55	....	...	2	2	7	7	9
East Chilliwack	"		66	66	....	...	2	....	7	7	6
Fairfield Island	"		60	60	....	....	2	....	8	8	8
Lotbiniere	R. McCaffrey		37	37	....	....	....	....	2	3	6
Parson's Hill	L. A. Patton		24	24	....	2	1	....	3	3	5
Promontory Flats	R. McCaffrey		18	18	2	....	....	....	4	4	4
Robertson	"		77	77	1	1	3	....	12	12	15
Rosedale	L. A. Patton		116	116	1	....	4	2	20	20	18
Sardis	R. McCaffrey		153	153	4	..	10	....	6	18	18
Sumas	"		38	36	1	....	2	....	2	3	3
Vedder	"		8	8	1	2	....	....	2	2	2
Yarrow	"		22	22	....	....	....	....	3	3	3
Coldstream:											
Coldstream	S. G. Baldwin		66	64	2	....	3	....	2	6	7
Lavington	"		34	32	....	....	1	....	3	5	....
Coquitlam:											
Blue Mountain	Bruce Cannon		37	34	..	....	..	1	....	....	....
Central	"		49	46	2	....	1	....	2	3	3
Glen	"		17	13	1	....	....	....	2	2	2
Maillardville	"		114	107	2	....	....	1	1	5	5
Silver Valley	"		10	6	....	....	....	....	1	1	1
Victoria Drive	"		14	13	....	....	....	....	1	1	1
Cowichan, North:											
Chemainus	H. B. Rogers	Miss Naden	158	134	2	....	8	....	10	8	9
Crofton	"	"	26	24	....	....	3	....	4	4	5
Westholme	"	"	19	18	..	....	2	....	1	1	....
Delta:											
Annacis Island	A. A. King		18	17	1	....	....	1	....	4	9
Annieville	"		21	15	1	2	....	....	....	....	2
Boundary Bay	"		36	31	1	3	2	....	6	6	7
Canoe Pass	"		15	14	....	2	1	1	4	4	6
Delta, East	"		26	24	2	....	2	....	1	4	5
Inverholme	"		14	13	3	....	2	....	3	4	7
Kennedy	"		29	29	1	....	5	2	2	4	8
Ladner	"		219	209	9	6	16	1	9	19	35
Mosher Siding	"		13	13	....	....	1	1	2	2	3
Sunbury	"		56	51	....	1	1	1	2	5	11
Tremant	"		33	31	3	2	1	....	2	6	7
Westham Island	"		24	23	2	4	3	....	9	9	9
Esquimalt:											
Esquimalt	J. S. McCallum	Miss Morrison	504	504	12	4	8	3	15	15	67
Kent:											
Agassiz	P. McCaffrey		159	134	1	2	15	16	53	77	77
Harrison River	"		22	12	1	1	1	4	7	7	7
Langley:											
Aldergrove	B. B. Marr		49	46	...	1	3	....	....	....	4
Belmont	"		22	19	....	....	....	....	....	....	2
County Line	"		58	54	....	....	1	....	2	2	7
Glen Valley	"		25	23	...	....	1	....	...	....	2
Glenwood	"		31	19	....		2	....	....	....	1
Langley, East	"		14	14	....	...	...	...	...	...	....
Langley Fort	"		84	78	....	....	....	....	....	....	2
Langley Prairie	"		148	125	....	1	12	1	1	1	10
Langley, West	"		72	59	....	....	4	....	....	1	8
Milner	"		82	78	....	....	9	....	....	...	6
Murrayville	"		130	124	2	1	11	....	1	1	11
Otter	"		52	49	....	...	5	....	....	....	7
Otter, South	"		22	19	....	...	1	....	....	....	1
Patricia	"		25	23	....	....	....	....	2	2	5
Sperling	"		29	25	....	....	...	...	1	1	3
Spring brook	"		23	21	...	....	....	....	....	....	6

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
13	....	13	.....	..	....	....	...	.....	Good.....	Good.
9	....	4	.....	....	....	....	....	.....	"	Yes.
20	....	13	.....	....	....	....	....	Scarlet fever	Pretty full; ventilation rather poor	"
19	....	10	Orthopædic, 1	....	....	....	...	Chicken-pox...	One room crowded; other O.K.	"
18	...	8	....	...	....	....	....	Chicken-pox.....	Good...	"
6	....	6	....	....	....	....	....	.....	"	Good.
9	....	4	....	....	....	....	....	....	"	Yes.
5	1	1	....	....	....	....	..	....	"	Good.
15	...	5	....	....	....	....	..	....	"	"
42	...	20	Cardiac, 1	...	....	1	...	Scarlet fever, diphtheria, measles, chicken-pox	Excellent	Yes.
16	....	24	....	....	....	....	....	.....	Good.....	Good.
3	....	4	....	....	....	....	....	....	Bad	Bad.
1	...	....	....	..	..	..	...	. ...	Good.....	Good.
2	....	1	....	....	....	....	....	....	Crowded; poorly ventilated	Bad.
7	4	4	....	...	....	....	....	Scarlet fever, 3; influenza	Good.....	Clean; adequate
....	3	3	.. ..	....	....	....	....	Influenza.....	"	"
3	. .	4	Granular lids, 2....	....	..	..	...	....	"	"
2	...	6	....	....	....	....	..	Measles	"	"
1	....	3	Spinal curvature, 2	..	...	....	....	....	"	"
10	....	15	Stammering, 1; acne, 2; valvular disease, heart, 1; granular lids, 1	..	...	....	....	Chicken-pox, mumps, measles	"	"
1	...	1	Spinal curvature, 1; granular lids, 1	....	..	..	....	Measles, chicken-pox ...	Poorly lighted; water-supply from creek	"
2	....	....	Mitral murmur, 1.	....	....	....	....	....	Good.....	"
47	11	3	Nervous, 2; cardiac, 3; orthopædic, 10; anæmia, 1	..	..	....	....	.....	Satisfactory.....	"
11	2	....	Orthopædic, 2	..	..	....	..	....	"	"
5	3	1	Cardiac, 1; orthopædic, 2....	....	....	....	....	....	"	"
4	..	....	....	....	....	....	..	....	Good.	Clean.
6	....	...	....	..	..	....	....	.....	"	"
3	3	...	....	..	...	2	....	German measles, 6	"	"
8	...	2	....	....	..	..	..	....	"	"
5	...	1	....	....	....	....	..	....	"	"
3	....	...	....	....	....	....	..	....	"	"
7	....	2	....	....	....	....	..	German measles, 6	"	"
20	2	12	Cardiac, 1	..	..	..	...	German measles, 49; measles, 15	First class	"
1	...	....	....	....	..	....	..	.. ..	Poor	Poor.
13	....	1	....	....	....	....	.	German measles, 20....	Good.....	Clean.
3	...	2	....	....	....	..	..	German measles, 3.....	"	"
2	....	1	Leaky valve, 1	...	.	..	4	German measles, 4	"	"
97	10	5	Chorea, 2; infantile paralysis, 1	..	..	7	....	Chicken-pox, tuberculosis, measles, meningitis, 2	Not crowded; well ventilated and heated	Clean; adequate.
7	6	15	....	...	..	...	....	Mumps, chicken-pox....	Rather crowded..	Rebuilt.
....	3	3	.. ..	1	....	1	....	German measles	....	Good.
1	....	1	....	....	...	5	....	....	Good.	Not water enough to flush toilets.
2	...	....	....	....	....	....	....	Measles, 8	"	Two; earth.
9	....	1	....	....	....	....	....	Scarlet fever, 4	"	"
2	....	1	....	....	....	....	....	Mumps, 1.	"	"
3	....	1	... .	....	2	....	....	Measles, 8	"	"
1	...	3	....	....	....	....	....	Measles, 6	"	"
3	....	....	....	....	....	....	....	Mumps 10; measles, 16	"	Eight; flush.
14	....	3	Cleft palate, 1.....	....	..	....	....	Measles, 17.	"	Not water enough to flush toilets.
6	....	4	Infantile paralysis	....	..	....	....	Measles, 23	"	Two; earth.
12	..	1	....	....	....	....	....	Whooping-cough, 10	"	Eight; flush.
5	...	3	....	....	....	1	....	Scarlet fever, 5	"	"
5	...	1	....	....	....	2	...	....	"	Two; bucket.
2	....	1	....	....	....	....	....	....	"	Two; earth.
4	2	...	....	....	....	....	..	Whooping-cough, 3.....	"	"
4	..	....	....	....	....	....	....	....	"	"
6	..	....	....	....	....	....	....	Whooping-cough, 8.....	Poor; ventilation via windows	Two; earth; not in good condition.

RURAL MUNICIPAL

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Maple Ridge:											
Albion	G. Morse		15	13	...	....	3	....	....	..	4
Hammond	"		138	118	....	...	2	....	...	2	46
Haney	"		234	219	...	..	12	....	....	2	28
Lillooet, South	"		29	20	...	....	1	....	..	....	7
Maple Ridge	"		71	62	....	....	6	....	....	1	8
Alex. Robinson	"		126	105	3	3	7	....	....	2	26
Ruskin	"		36	30	...	....	2	....	....	1	12
Webster's Corner	"		83	79	....	....	5	1	....	....	24
Whonnock	"		91	82	....	....	1	....	....	....	22
Matsqui:											
Aberdeen	T. A. Swift		56	54	2	1	3	...	2	2	6
Bradner	"		56	47	2	....	2	....	1	1	5
Clayburn	"		71	68	1	2	6	...	2	2	8
Dunach	"		13	12	....	1	....	....	....	....	1
Gifford	"		58	53	4	3	....	....	2	2	13
Jubilee	"		22	22	....	....	....	....	1	1	3
Matsqui	"		80	72	3	....	4	....	....	....	8
Mount Lehman	"		43	33	1	1	2	....	....	....	4
Peardonville	"		19	18	1	....	....	....	2	2	4
Poplar	"		55	50	2	1	4	...	....	....	5
Ridgedale	"		66	63	2	...	1	1	4	4	14
Mission:											
Cardinell	A. J. Stuart		9	9	....	1	1	....	....	1	2
Cedar Valley	"		52	42	....	....	2	....	...	7	10
Hatzic	"		60	43	....	....	....	....	....	2	18
Mission City	"		356	304	10	3	12	....	....	18	50
Silverdale	"		23	20	....	....	...	....	....	....	7
Silverhill	"		13	13	....	....	....	....	....	....	2
Stave Falls	"		25	25	....	....	2	...	...	3	5
Stave River Gardens	"		14	14	....	....	....	....	1	2	2
Steelhead	"		15	14	2	3	1	....	....	2	....
Oak Bay:											
Monterey Avenue	J. N. Taylor	Miss Bradshaw	322	308	2	8	16	2	48	18	67
Willows	"	"	288	279	1	4	14	1	23	18	70
Peachland:											
Peachland	Wm. Buchanan		46	43	....	....	5	....	....	....	13
Trepanier	"		14	12	....	...	....	....	....	....	1
Penticton:											
Ellis	H. McGregor		680	680	61	10	46	15	20	25	143
Pitt Meadows:											
Pitt Meadows	L. Broe		128	110	....	....	1	3	....	...	16
Point Grey:											
Edith Cavell	W. Dykes.	Miss M. Ewart	343	326	16	....	21	4	2	....	16
Kerrisdale	"	Mrs. C. M. Hyde	763	788	9	....	38	4	....	4	65
Lord Kitchener	"	"	506	518	3	....	13	6	....	2	34
Langara	"	"	326	322	6	....	14	....	....	....	20
Lloyd George	"	Miss M. Ewart	609	671	18	....	34	4	7	8	56

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
9	...	....	....	....	....	....	....	... .	Good.....	Clean.
56	...	....	.. ..	..	....	....	....	....	"	"
116	...	....	....	...	....	....	....	....	"	"
9	....	....	....	....	....	....	....	....	"	"
29	....	...	.....	....	....	....	...	....	"	"
47	....	..	....	....	....	....	....	.....	"	"
13	...	....	.....	....	....	...	....	.....	"	"
30	....	....	....	....	....	....	....	....	"	"
38	....	....	....	....	....	....	....	.....	"	"
18	....	1	Double congenital cataract, 1..	...	....	...	....	... ...	"	Yes.
13	..	2	....	....	....	...	....	.....	"	"
4	2	3	....	....	...	....	...	.....	"	"
....	...	2	....	....	....	....	....	....	"	"
5	....	3	Tonsillitis, 1.....	....	....	....	....	....	Water-supply from ditch	"
2	...	...	....	....	....	....	....	....	....	"
6	3	5	Follicular tonsillitis, 1.....	....	....	...	....	....	... .	"
3	..	1	Chorea, 1....	....	....	....	...	....	Difficult school to ventilate, due to construction of windows	"
6	....	..	....	....	....	....	....	....	No water obtainable, due to periodic blocking of pipe	"
16	....	1	Parotitis, 1.....	....	....	...	....	....	.....	"
10	....	6	.....	....	....	....	....	....	....	"
2	....	1	....	....	....	....	....	....	Fairly good	Clean; adequate.
20	....	14	....	....	....	....	....	Measles, 6	Old building; crowded	"
15	....	12	.....	....	....	2	....	Scarlet fever, 2; measles, 20	Somewhat worn..	"
90	5	20	Asthmatic, 1.....	...	...	25	...	Chicken-pox, 1; measles, 20	All rooms overcrowded	"
9	...	3	....	...	...	....	....	.....	Very good.....	"
3	....	....	....	....	....	....	....	....	Good.....	"
8	....	1	....	....	....	....	....	.....	Most satisfactory.	"
6	....	1	.....	....	...	1	....	....	"	"
5	....	...	....	....	....	....	....	....	Good.....	"
44	4	18	Stammering, 1; pulmonary, 7; cardiac, 11; orthopædic, 5; anæmic, 14; nervous, 1	....	1	....	....	Measles, whooping-cough, influenza	Excellent; well heated and ventilated; no overcrowding	"
29	1	20	Cardiac, 7; anæmic, 12; hernia, 1; nervous, 1; pulmonary, 1; cleft palate, 1; speech defective, 1	....	..	....	....	Measles, whooping-cough, influenza	Excellent; well heated and ventilated; no overcrowding	"
19	....	40	....	....	....	....	....	....	Satisfactory	"
5	...	11	....	....	....	..	....	....	"	"
150	32	70	Nervous, 13; cardiac, 7; acne, 28; orthopædic, 7	....	....	6	....	Chicken-pox, influenza, measles	Excellent	Excellent.
65	21	35	Measles, 70; chicken-pox, 21 ..	....	...	....	....	... .	Good.....	Clean; adequate.
43	11	....	Adolescent goitre, 59; cardiac, 15; orthopædic, 9; anæmia, 2	1	1	5	2	Scarlet fever, 2; measles, 17; mumps, 4; chicken-pox, 1; rubella, 78	"	Good.
73	34	....	Adolescent goitre, 88; pulmonary, 2; cardiac, 24; anæmia, 6; orthopædic, 9	...	1	24	11	Scarlet fever, 2; measles, 41; whooping-cough, 1; rubella, 125; chicken-pox, 3	"	"
43	16	. ..	Adolescent goitre, 31; cardiac, 11; pulmonary, 3; anæmia, 1; orthopædic, 5	....	2	29	14	Scarlet fever, 1; measles, 45; mumps, 1; whooping-cough, 4; rubella, 91; chicken-pox, 1; diphtheria, 7	"	"
28	20	...	Adolescent goitre, 30; cardiac, 3; orthopædic, 2; anæmia, 1	1	2	13	6	Scarlet fever, 1; measles, 43; whooping-cough, 3; rubella, 65; chicken-pox, 3	"	"
90	28	....	Adolescent goitre, 75; cardiac, 8; pulmonary, 3; anæmia, 9; orthopædic, 8	3	1	10	7	Diphtheria, 2; measles, 23; whooping-cough, 9; rubella, 57; chicken-pox, 13	"	"

RURAL MUNICIPAL

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Point Grey—*Continued.*											
Magee	W. Dykes.	Miss M. Ewart	674	648	15	1	61	5	10	2	54
Oak Street	"	"	145	150	8	....	9	4	...	2	14
Prince of Wales	"	"	473	521	15	....	38	2	1	....	19
Quilchena	"	"	221	191	1	....	11	....	....	1	17
Queen Mary	"	Mrs. C. M. Hyde	571	610	7	....	23	2	2	6	38
Richmond:											
Bridgeport	W. K. Hall		420	400	10	1	15	2	15	20	30
Lord Byng	"		415	400	8	...	15	1	15	25	25
English	"		20	20	3	....	1	....	....	2	2
General Currie	"		32	30	....	....	2	....	....	1	1
Mitchell	"		92	90	10	2	5	...	7	7	7
Sea Island	"		90	85	2	...	5	....	3	10	15
Trites	"		21	18	7	....	2	....	....	2	2
Saanich:											
Cedar Hill	R. L. Miller.	Miss McRae.	158	158	....	2	3	4	1	...	....
Cloverdale	"	"	242	242	1	....	5	5	3	....	....
Craigflower	"	"	92	92	....	1	3	1	....	....	....
Gordon Head	"	"	40	40	....	1	2	....	1	....	...
Keating	"	"	56	56	....	2	3	1	....	....	....
Lake Hill	"	"	45	45	...	....	6	....	....	...	....
MacKenzie Avenue	"	"	159	159	2	1	10	2	....	....	2
Model	J. P. Vye.	Miss M. Griffin	83	81	...	...	1	1	....	2	7
Prospect Lake	R. L. Miller	Miss McRae.	28	28	...	..	1	1	...	....	....
Royal Oak	"	"	62	62	....	2	3	...	..	....	...
Saanichton	"	"	31	31	....	.	2	...	...	...	....
Saanich, West	"	"	47	47	....	1	2	....	....	...	...
Strawberry Vale	"	"	94	94	...	1	3	2	....	....	....
Tillicum Road	"	"	230	230	1	....	10	4	....	....	2
Tolmie	"	"	279	279	...	1	4	4	2	....	....
Sumas:											
Huntingdon	T. A. Swift		63	55	...	....	2	...	2	...	17
Kilgard	"		37	34	2	....	3	....	....	3	13
Straiton	"		15	14	...	....	....	..	....	2	5
Sumas, Upper	"		74	65	...	...	1	....	....	....	13
Summerland	F. W. Andrew		286	277	21	5	41	2	23	45	58
Surrey:											
Anniedale	F. D. Sinclair		16	15	1	....	....	....	....	...	3
Clayton	"		68	64	2	....	3	....	...	.	4
Cloverdale	"		189	172	3	...	8	....	....	1	11
Colebrook	"		38	35	..	...	1	....	..	...	4
Crescent	"		27	24	3	...	3	....	....	....	2
Elgin	"		25	23	....	....	..	....	....	....	....
Grand View Heights	"		22	22	..	...	....	....	.	....	1

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
60	22	...	Adolescent goitre, 72; cardiac, 8; pulmonary, 4; orthopædic, 19	....	3	8	8	Scarlet fever, 1; measles, 69; whooping-cough, 5; rubella, 207; diphtheria, 2	Good.....	Good.
11	11	....	Adolescent goitre, 24; cardiac, 4; nervous, 1; pulmonary, 1; orthopædic, 2; anæmia, 1	....	...	....	....	Measles, 12; rubella, 35; chicken-pox, 10	"	"
24	24	....	Adolescent goitre, 76; cardiac, 15; nervous, 1; pulmonary, 3; orthopædic, 11; anæmia, 3	1	2	7	9	Scarlet fever, 6; measles, 26; rubella, 127; diphtheria, 3; chicken-pox, 2	"	"
10	8	....	Adolescent goitre, 24; cardiac, 4; orthopædic, 3	....	...	....	3	Measles, 31; rubella, 25; diphtheria, 11; whooping cough, 5	"	"
45	26	....	Adolescent goitre, 50; cardiac, 10; anæmia, 1; orthopædic, 8	....	1	21	2	Measles, 43; rubella, 82; mumps, 1; whooping-cough, 2; chicken-pox, 16	"	"
35	....	15	....	....	....	....	2	Diphtheria, 12; scarlet fever, 5; chicken-pox, 2; mumps, 10; roetheln, 20; measles, 35	Crowded	Clean.
20	5	10	.....	....	2	15	....	Measles, 5; mumps, 10..	....	"
5	...	...	....	....	...	....	....	....	....	"
...	...	...	....	...	...	...	....	Chicken-pox, 4.....	....	"
10	5	5	....	3	....	3	....	Diphtheria, 2; measles, 5; chicken-pox, 4	Crowded	"
5	....	....	.....	....	2	10	5	.....	"	"
5	...	1	....	....	...	...	...	....	....	"
....	....	....	Vernal catarrh.....	....	....	....	...	Measles, 1	Good.	Clean; adequate.
....	....	....	....	10	....	...	....	Chicken-pox, 32; measles, 1; typhoid, 1; whooping-cough, 1; scarlet fever, 1	"	"
....	....	...	....	....	...	....	..	Chicken-pox, 1; measles, 1; whooping-cough, 3	"	"
....	....	....	.....	....	....	....	....	Measles, 2	"	"
....	....	...	Chronic arthritis, 1.....	....	....	....	....	Chicken-pox, 6; scarlet fever, 1; whooping-cough, 1; measles, 2	"	"
....	....	....	....	....	....	....	....	Measles, 13; whooping-cough, 1	"	"
....	....	....	....	3	1	....	1	Chicken-pox, 21; measles, 2	"	"
16	....	4	Corrections, 19.....	....	...	...	....	Measles, 1; influenza, 1	O.K.	O.K.
....	....	....	....	....	....	....	....	....	Good.....	Clean; adequate.
....	....	....	....	....	....	....	....	Measles, 29.....	"	"
....	....	....	....	....	....	....	....	Chicken-pox, 6; measles, 1	"	"
....	....	...	....	....	3	...	....	Measles, 1; mumps, 1; whooping-cough, 2	"	"
...	....	...	....	....	2	....	....	Chicken-pox, 19; measles, 17	"	"
..	1	....	Appendicitis, 1.	6	5	....	....	Chicken-pox, 11; measles, 8; mumps, 1; whooping-cough, 3	"	"
....	....	....	Pleurisy, 1.....	1	6	....	....	Chicken-pox, 10; measles, 3; scarlet fever, 7	"	"
13	....	4	....	....	....	....	.. ..	.....	Very good...	Fair.
10	....	2	....	....	....	....	....	.. ..	"	Good.
3	....	1	....	.	...	....	...	....	"	"
13	....	5	....	....	....	....	...	....	Good.....	Require attention.
132	59	83	Anæmia, 13; acne, 2; cardiac, 2; eczema, 1	....	....	4	....	Roetheln, 1; chicken-pox, 2	.....	.....
....	1	3	Endocarditis, 1; cleft palate, 1	....	....	....	....	Measles	Poor	Clean.
4	13	2	Poly. ant. chronic, 1; fct. systolic, 1	....	....	....	....	Measles	Satisfactory.. ...	Poor.
...	28	6	Impediment in speech, 1; hypothyroid, 1	....	....	....	....	Chicken-pox, rubella, measles	"	Good.
....	..	2	....	....	....	....	....	Measles	"	Clean.
...	....	1	....	....	....	....	....	....	"	"
....	2	....	....	.....	.....	.....	....	Measles	"	"
....	2	....	Infantile paralysis, 1.....	...	...	...	....	Whooping-cough	"	"

RURAL MUNICIPAL

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Surrey—*Continued.*											
Hall's Prairie	F. D. Sinclair		82	68	1	....	2	....	1	2	9
Hjorth Road	"		17	15	....	....	....	....	....	....	3
Johnston Road	"		53	50	3	....	2	....	1	1	3
Kensington, East	"		59	51	5	....	3	....	....	....	3
Kensington Prairie	"		43	34	1	....	3	....	....	....	1
Newton	"		99	90	4	....	1	....	....	....	5
Port Mann	"		39	31	4	....	1	....	....	....	2
Springdale	"		59	54	8	....	5	....	....	....	5
Strawberry Hill	"		41	36	1	....	1	....	....	....	2
Surrey Centre	"		25	23	2	....	....	....	....	....	1
Tynehead	"		45	40	5	....	1	....	....	....	4
Westminster, South	"		148	129	5	....	4	....	....	....	8
White Rock	"		171	169	14	....	12	....	....	3	16
Woodward's Hill	"		31	30	1	....	....	....	....	....	....
Vancouver, North:											
Capilano	R. V. McCarley		132	132	1	....	9	2	11	10	25
Keith Lynn	"		102	102	3	1	7	....	4	4	23
Lynn Valley	"		300	300	4	2	22	2	29	25	57
North Star	"		215	215	....	1	11	3	28	20	34
Roche Point	"		38	38	....	....	2	....	2	2	4
Vancouver, South:											
Brock	G. A. Lamont	Miss E. Bell	498	498	45	..	10	....	11	20	40
Carleton	"	Miss E. Edwards	900	899	216	4	21	....	35	36	63
Champlain	"	"	16	16	2	....	....	....	4	5	4
Connaught	"	"	60	58	5	2	2	....	7	9	11
Gordon	"	"	476	476	78	1	9	....	19	24	29
Moberly-Fraser	"	Miss E. Bell	551	551	99	3	9	....	7	24	48
R. McBride	"	"	719	717	102	5	9	1	13	39	53
Sir A. Mackenzie	"	"	682	682	110	1	13	1	11	25	45
John Norquay	"	Miss E. Edwards	504	502	103	15	19	....	16	19	39
Laura Secord	"	"	247	243	24	....	8	....	17	11	10
Lord Selkirk	"	"	944	944	100	4	17	2	30	45	56
Sexsmith	"	Miss E. Bell	342	342	64	2	3	....	1	16	22
Tecumseh	"	Miss E. Edwards	718	712	40	1	6	....	19	24	37

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
1	10	....	Appendix, 1; defective palate, 1; endocarditis, 1; pigeon-chest, 1	....	1	1	....	Whooping-cough	.....	.....
....	7	....	.....	5	....	....	....	.....	Satisfactory.....	Clean.
1	5	4	High-arch palate, 1; anæmia, 1; pigeon-chest, 1	....	....	....	....	Measles, chicken-pox ...	"	"
....	13	4	Chronic infantile paralysis, 1; anæmia, 1	....	1	....	....	Whooping-cough	"	"
....	9	....	.....	....	....	....	....	Measles	"	"
1	8	6	Anæmia, 1; chorea, 1; ant. poly., 1; cryptic tonsil, 1; endocarditis, 1	....	2	....	....	Whooping-cough, measles	"	"
1	4	1	Pyorrhœa. 1; D.A.H., 1.	....	....	....	....	Measles	"	"
1	14	1	Endocarditis, 1.....	....	....	....	....	Measles	"	"
....	5	2	Marginal blepharitis, 1; facial paralysis, 1; deviated septum, 1	....	....	....	....	Measles	"	"
....	10	....	.....	....	....	....	....	Measles	"	"
1	7	2	.....	....	....	....	....	.....	"	"
2	20	2	Bifid uvula, 3; foreign body in ear, 2; chorea, 1; endocarditis, 1; cleft palate, 1; fct. systolic, 1; pigeon-chest, 1	....	2	1	....	Chicken-pox, measles ...	"	"
2	16	2	Anæmia, 2	....	....	....	....	.....	"	Good.
1	5	2	....	2	....	....	....	....	"	"
15	7	3	Asthma, 1; defective speech, 1; heart-disease 3; epilepsy, 1	....	7	6	....	Measles, chicken-pox ...	"	Clean; adequate
18	2	6	Heart-disease, 2....	....	....	8	1	Measles	"	"
43	17	12	Heart-disease, 1; bronchitis, 1; epilepsy, 1	....	....	15	....	Measles, whooping-cough	"	"
26	16	8	Asthma, 4; bronchitis, 1.....	....	....	11	6	Measles, scarlet fever, chicken-pox	"	"
5	....	3	.....	....	....	....	....	Measles	"	"
96	14	13	Conjunctivitis, 2; throat cultures, 9; home visits, 26; vaccinations, 31;	....	7	5	14	Scarlet fever, 2; measles, 59; rubella, 103; chicken-pox, 8	"	Satisfactory.
178	25	21	Conjunctivitis, 3; throat cultures, 7; home visits, 51; vaccinations, 50	1	16	16	6	Scarlet fever, 4; measles, 77; diphtheria, 2; rubella, 274; mumps, 4; chicken-pox, 9; whooping-cough, 12	"	"
2	1	...	Vaccinations, 1	....	....	....	....	Rubella, 7; whooping-ing-cough, 2	"	"
3	1	....	Vaccinations, 4; home visits, 5	....	....	....	....	Measles, 4; rubella, 8; whooping-cough, 3	"	"
92	20	13	Vaccinations, 21; home visits, 34; conjunctivitis, 1	3	2	10	3	Scarlet fever, 1; measles, 7; rubella, 85; chicken-pox, 3; mumps, 5; whooping-cough, 3	"	"
102	8	20	Vaccinations, 12; home visits, 34	1	4	25	14	Measles, 9; rubella, 120; whooping-cough, 2; chicken-pox, 28	"	"
108	9	26	Vaccinations, 30; home visits, 89; conjunctivitis, 3; throat cultures, 1	....	5	14	13	Measles, 30; rubella, 99; whooping-cough, 7; chicken-pox, 10	"	"
161	6	27	Vaccinations, 21; home visits, 44; conjunctivitis, 8	2	5	11	7	Rubella, 65; diphtheria, 1; measles, 26; chicken-pox, 2	"	"
134	7	20	Conjunctivitis, 2; vaccinations, 10; home visits, 35	....	2	2	2	Scarlet fever, 1; measles, 17; rubella, 67; chicken-pox, 10	Satisfactory.....	"
62	6	7	Vaccinations, 6; throat cultures, 1; home visits, 5	2	....	....	1	Measles, 22; rubella, 13; mumps, 1; chicken-pox, 4	"	"
135	21	13	Conjunctivitis, 7; vaccinations, 41; throat cultures, 123; home visits, 139	4	12	20	3	Scarlet fever, 3; measles, 20; rubella, 124; chicken-pox, 8; diphtheria, 9; carriers, 7; mumps, 52	"	"
67	3	13	Conjunctivitis, 5; vaccinations, 15; home visits, 6	4	2	10	5	Measles, 12; rubella, 64; chicken-pox, 3; whooping-cough, 16	"	"
96	13	8	Conjunctivitis, 12; vaccinations, 20; throat cultures, 21; home visits, 67	....	7	7	1	Scarlet fever, 3; measles, 21; rubella, 157; diphtheria, 4; chicken-pox, 31; mumps, 3	"	"

RURAL MUNICIPAL

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Vancouver, South—*Continued.*											
Van Horne	G. A. Lamont	Miss E. Bell	428	426	58	1	10	1	4	12	19
General Wolfe	"	"	703	703	99	7	15	...	12	31	56
Vancouver, West:											
Capilano	F. Stainsby		5	5	....	..	....	....	....	....	1
Cypress Park	"		14	14	....	....	....	....	....	....	7
Dundarave	"		52	52	....	....	....	1	....	.	17
Pauline Johnson	"		365	365	....	....	3	2	....	....	39
Whytecliffe	"		5	5	....	....	....	....	....	....	....

RURAL AND

Abbotsford	T. A. Swift		216	170	5	....	3	....	1	2	47
Adelphi	R. W. Irving		13	11	....	....	1	....	....	2	2
Ainsworth	D. J. Barclay		16	16	2	....	1	....	2	2	6
Albert Canyon	J. H. Hamilton		13	13	....	....	2	....	....	....	....
Albert Head	Irene B. Hudson	Miss H. Kelly	13	13	....	....	1	....	....	2	4
Albreda	Thos. O'Hagan		11	7	....	....	....	....	....	....	5
Alert Bay	C. A. Watson		52	40	....	....	3	....	....	3	16
Alexander Manson	D. B. Lazier		12	12	....	....	....	....	....	3	5
Alexandria, North	G. R. Baker		7	7	....	....	....	....	....	....	....
Alexis Creek	G. A. Charter		11	11	....	....	2	....	....	....	1
Aleza Lake	W. E. Laishley		34	32	2	2	3	2	4	4	13
Alice Arm	D. R. Learoyd	Miss A. J. Duncan	22	22	....	....	5	....	....	....	12
Alice Siding	G. B. Henderson		21	18	....	....	4	....	....	1	2
Allenby	Lee Smith		48	48	....	....	2	....	4	6	14
Allen Grove	H. McGregor		13	13	1	....	2	....	....	1	1
Anarchist Mountain	A. Francis		16	16	....	1	....	....	....	....	9
Anderson Creek	C. J. M. Willoughby		11	10	4	....	....	....	....	....	3
Anglemont	W. Scatchard		16	15	....	....	1	....	....	....	....
Annable	W. A. Coghlin		15	15	....	....	1	....	....	1	1
Appledale	H. H. MacKenzie		29	29	5	....	1	....	....	3	7
Argenta	D. J. Barclay		9	9	....	....	1	....	1	1	4
Arrowhead	J. H. Hamilton		12	11	....	....	....	....	....	....	1
Arrow Park, East	P. J. Emerson		9	9	1	....	1	....	....	....	5
Arrow Park, West	"		12	8	1	....	1	....	....	....	2
Ashcroft	R. Gibson		97	90	6	4	7	3	1	5	22
Ashnola	Lee Smith		9	9	....	1	....	1	4	5	6
Ashton Creek	H. W. Keith		21	21	....	....	....	....	1	1	3
Athalmer-Invermere	F. E. Coy		78	60	2	1	....	....	....	4	4
Atlin	R. J. Wride		23	22	1	....	1	....	6	3	8
Avola	M. G. Archibald		14	14	....	....	3	..	1	2	3
Balfour	D. J. Barclay	Miss Garrood	17	17	....	1	....	....	....	....	4
Balmoral	W. Scatchard		17	15	....	....	2	....	....	4	5
Bamfield	Guy Palmer		31	31	....	....	4	....	4	6	6
Barnston Island	G. Morse		16	15	....	....	....	....	....	....	6
Barriere River	R. W. Irving		6	6	....	....	....	....	....	....	....
Baynes Lake	H. A. Christie		27	25	....	....	1	....	3	3	5
Beaton	J. H. Hamilton		15	13	....	....	....	....	....	....	....
Beaver Creek	A. D. Morgan		23	20	....	1	....	....	....	....	3
Beaver Cove	C. A. Watson		12	12	....	....	1	1	....	....	4
Beaverdell	A. Francis		18	17	....	....	....	....	....	....	5
Beaver Lake	F. V. Agnew		9	8	....	....	2	....	....	....	3
Beaver Point	E. M. Sutherland		9	9	....	....	....	....	....	..	1
Beaver River	J. Sandilands		12	12	....	....	....	2	....	1	2
Begbie	J. H. Hamilton		12	11	....	..	1	....	....	....	1
Belford	H. H. MacKenzie		20	20	....	....	....	....	....	....	3
Bella Coola	G. E. Bayfield		48	48	5	4	5	....	16	16	16
Bella Coola, Lower	"		16	16	3	2	2	....	5	5	5

SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
108	4	15	Conjunctivitis, 3; vaccinations, 23; home visits, 34	8	7	12	4	Scarlet fever, 1; measles, 12; whooping-cough, 3; rubella, 67; mumps, 1	Satisfactory	Satisfactory.
122	7	30	Conjunctivitis, 15; vaccinations, 33; throat cultures, 6; home visits, 84	4	3	4	2	Diphtheria, 1; measles, 75; chicken-pox, 7; rubella, 142; mumps, 4	"	"
3	3	....		....	....	....	....		Good	Yes.
8	6	....	Cardiac, 1	....	....	....	....	Scarlet fever, 3; measles, 63	"	"
26	23	1		....	....	....	....		"	"
47	48	2	Cardiac, 1; nervous, 1	....	....	....	....		"	"
....	....	....		....	....	....	....		"	"

ASSISTED SCHOOLS.

36	6	16	Scoliosis; curvature of spine, 1	....	....	20	....	Measles, 9; chicken-pox, 12	....	Fairly adequate.
....	....	1		....	....	....	....	....	Good	Two; clean.
5	2	15		....	....	....	....	....	No	Yes.
2	....	....		....	....	....	....	....	Good	Good.
4	1	1		....	....	....	....	Measles, 2	Fairly satisfactory	Need attention.
4	....	....		....	....	....	....	Measles, 2	Clean; fairly well ventilated	Clean.
31	....	1		....	....	1	....	Scarlet fever, 1; influenza, 1	Good	Clean; adequate.
....	....	4		....	....	....	....	....	"	Clean.
....	....	....		....	....	....	....	....	No	Yes.
....	....	....		....	....	....	....	....	Not crowded; well ventilated and heated	Clean; adequate.
15	1	1		....	....	....	....	Influenza	Slightly crowded; ventilation and heating good	Outside toilets in good condition.
2	2	7		....	....	....	....	....	Satisfactory	Two outside cans emptied regularly.
7	....	....		....	....	....	....	....	Good	Clean; adequate.
20	....	6		....	....	....	....	Chicken-pox, 21	"	Yes.
2	1	2		....	....	....	....	Chicken-pox	"	Good.
1	13	6		....	....	....	....	....	O.K.	O.K.
3	2	....	Orthopædic, 1	....	....	....	....	....	Satisfactory	Clean; adequate.
2	....	4		....	....	....	....	....	Lighting fair	Satisfactory.
9	....	1	Cardiac, 1	....	....	....	....	....	....	....
13	....	4	Anæmia, 2; rupture, 1	....	....	....	....	....	Good	Clean; adequate.
4	....	6		....	....	....	....	....	No	Yes.
....	....	....		....	....	....	....	....	Good	Good.
3	1	1		....	....	....	....	....	"	Fair.
2	....	2		....	....	....	....	....	"	"
40	22	12	Bronchitis, 1	....	....	....	....	....	Not crowded; ventilation, light, and heat good	Clean; adequate.
2	....	1		....	....	....	....	....	Fair	Yes.
4	....	1		....	....	....	....	....	Good	"
17	....	3		....	....	....	....	Measles, 26	Furnace not satisfactory in cold weather	Clean; adequate.
7	3	....		....	....	....	1	Scarlet fever, rubella	Poorly heated	Adequate.
11	3	6	Vaccinated, 5	....	....	....	....	....	Good	Well taken care of
....	....	17		....	....	....	....	....	No	Yes.
14	3	4		....	....	....	....	....	Satisfactory	Satisfactory.
8	....	5		....	....	....	....	....	Neither	Yes.
10	3	1		....	....	....	....	....	Good	O.K.
....	....	....		....	....	....	....	....	"	Two; clean.
11	....	....		....	....	....	....	....	Satisfactory	Clean; adequate.
1	....	1		....	....	....	....	....	Good	Good.
8	....	7	Heart, 1	....	....	....	....	....	"	"
6	....	3		....	....	....	....	....	"	Clean; adequate.
5	9	3	Cardiac, 1	....	....	....	....	....	O.K.	O.K.
1	1	....		....	....	....	....	....	Good	Yes.
4	3	....		....	....	....	....	....	Satisfactory	Not satisfactory.
4	1	1	Chicken-pox, 1	....	....	....	....	....	New building	Two; fair.
....	....	5	Orthopædic, 1	....	....	....	....	....	Good	Good.
6	....	11	Heart, 2; defective speech, 1	....	....	....	....	....	"	Clean; adequate.
10	4	9		....	....	....	....	....	"	Good.
6	1	5		....	....	....	....	....	"	"

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Bench	F. T. Stanier	Miss Naden	17	15	....	....	1	....	....	....	2
Bend	J. Sandilands	.....	12	12	....	....	1	...	....	....	3
Beresford	C. J. M. Willoughby	....	9	9	1	...	....	....	....	....	2
Bevan	G. K. MacNaughton	.....	33	29	3	1	2	1	1	1	5
Big Bar Creek	R. H. Mason	.....	13	11	2	3	....	1	1	3	6
Big Bar Mountain	"	.....	12	12	1	....	1	1	....	....	2
Big Creek	G. A. Charter	.....	11	11	....	...	1	....	....	...	4
Big Eddy	J. H. Hamilton	.....	20	19	....	....	....	....	2	2	2
Big Lake	F. V. Agnew	.....	7	7	....	....	...	....	....	....	....
Birch Island	M. G. Archibald	.....	23	23	....	....	....	1	4	....	2
Birken	N. J. Paul	.....	8	8	....	....	1	....	1	1	2
Black Canyon	R. Gibson	.....	14	14	1	2	....	....	....	5	7
Black Pines	R. W. Irving	.....	8	8	...	....	....	....	1	3	3
Blackpool	H. L. Burris	.....	23	22	..	....	2	...	2	2	3
Blakeburn	E. Sheffield	.....	67	67	3	....	6	1	5	11	44
Blind Bay	W. Scatchard	.....	13	12	....	....	....	....	....	2	2
Blind Channel	C. A. Watson	.....	11	11	...	1	3	....	1	1	5
Blubber Bay	Kingsley Terry	.....	28	28	15	2	6	1	1	2	21
Blueberry Creek	J. B. Thom	.....	13	13	....	...	....	....	....	....	3
Blue River	Thos. O'Hagan	.....	16	16	1	1	3	....	....	2	2
Bonaparte	R. H. Mason	.....	8	8	...	....	3	....	1	2	2
Bonchie	G. R. Baker	.....	11	11	...	....	....	....	....	.. .	....
Bonnington Falls	H. H. MacKenzie	.....	20	20	3	....	1	...	....	....	7
Boston Bar	P. M. Wilson	.....	20	20	1	.. ..	....	...	2	2	4
Boswell	G. B. Henderson	.....	14	12	1	....	1	....	....	1	4
Boulder Siding	W. C. Bissett	.....	12	12	....	....	....	1	....	2	4
Boundary Falls	A. Francis	.....	14	13	....	....	....	....	....	....	4
Bowen Island	F. Inglis	.....	25	20	...	....	1	....	....	1	4
Bowie	J. H. Hamilton	.....	13	12	....	....	....	....	....	....	2
Bowser	L. T. Davis	Miss Jukes	15	15	....	....	1	....	....	....	....
Box Lake	P. J. Emerson	.....	24	24	....	...	3	....	3	3	14
Brackendale	N. J. Paul	.....	22	22	....	...	1	....	2	2	6
Brechin	T. J. McPhee	.....	139	130	3	....	5	3	9	11	10
Bridesville	A. Francis	.....	19	19	1	....	1	....	....	1	13
Bridge Lake	R. H. Mason	.....	9	9	....	....	3	....	...	2	4
Brilliant	J. B. Thom	.....	121	117	1	....	3	2	...	6	66
Brisco	F. E. Coy	.....	11	11	....	....	....	....	...	....	....
Britannia Beach	A. M. Menzies	.....	57	56	3	....	....	....	....	4	18
Britannia Mine	"	.....	70	66	7	....	...	....	....	10	24
Brookmere	J. J. Gillis	.....	14	14	2	....	1	....	1	1	2
Brown Creek	W. Truax	.....	9	9	...	....	....	....	2	2	4
Buckley Bay	J. C. Dunn	.....	9	9	...	....	1	....	...	...	...
Bull River	H. A. Christie	.....	59	58	....	...	2	....	7	7	15
Burgoyne Bay	E. M. Sutherland	.....	22	22	....	....	...	...	....	....	2
Burns Lake	J. T. Steele	.....	61	61	...	2	4	....	6	7	10
Burtondale	P. J. Emerson	.....	35	34	....	....	1	2	10	10	23
Cache Creek	R. Gibson	.....	10	10	....	....	1	...	....	....	2
Cahilty	R. W. Irving	.....	8	8	....	1	1	....	....	1	1
Campbell Ranch	M. G. Archibald	.....	8	8	....	....	1	....	1	....	3
Campbell River	R. E. Ziegler	.....	60	60	2	....	1	....	4	4	4
Camp No. 3	T. A. Briggs	.....	21	20	....	....	....	....	....	4	4
Canford	J. J. Gillis	.....	16	12	1	1	2	1	1	2	2

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
6	....	....	....	....	....	....	....	....	Good	Yes.
1	....	....	....	....	....	....	....	....	Fair	Two; fair.
1	2	....	....	....	....	....	....	....	Good	Clean.
17	14	1	Wax in ears, 2; blepharitis, 2; skin-disease, 1; anæmic, 2; nasal catarrh, 1	....	....	....	....	Chicken-pox, measles	O.K.	Clean; adequate.
6	6	....	....	....	....	....	....	....	Poor; in need of repair	Unsanitary.
3	1	1	....	....	....	....	....	....	Adequate; good	Sanitary.
....	....	....	....	....	....	....	....	....	Not crowded; well ventilated and heated	Clean; adequate.
3	....	2	....	....	....	....	....	....	Good	Good.
....	1	1	....	....	....	....	....	Influenza	"	Yes.
5	7	2	....	....	....	....	....	....	Ventilation not good	Clean; adequate.
4	1	....	....	....	....	....	....	....	Good	Clean.
11	6	1	....	....	....	....	....	....	Poor light and ventilation; overcrowded	Clean; adequate.
....	....	....	Mental regurgitant, 1	....	....	....	....	....	Good	Clean; two.
6	3	....	....	....	....	1	....	....	Good ventilation and heating	Adequate; door off one.
19	....	5	....	....	....	....	....	....	Good	Clean.
7	....	1	....	....	....	....	....	....	Satisfactory	Satisfactory.
8	....	1	....	....	....	....	....	Smallpox, 1	Good	Clean; adequate.
21	21	4	Nervous, 4; cardiac, 2	....	....	....	1	Influenza, 6; tonsillitis, 4; scarlet fever, 1	Building O.K.; should have tap water	Not clean.
5	....	4	Cardiac, 1	....	....	....	....	....	....	....
4	....	....	....	....	....	....	....	....	Clean; fairly well ventilated	Clean.
2	4	4	....	....	....	....	....	....	Adequate	Sanitary; need repair.
....	....	....	Hæmophilia, 1	....	....	....	....	....	No	Yes.
5	1	3	....	....	....	....	....	....	Excellent	Excellent.
11	5	4	....	....	....	....	....	....	Fair	Fairly clean.
1	....	1	Defective septum, 1	....	....	....	....	....	Good	Clean; adequate.
6	....	3	....	....	....	....	....	....	....	....
1	13	13	....	....	....	....	....	....	O.K.	O.K.
9	....	....	....	....	....	....	....	....	Good	Yes.
3	1	....	....	....	....	....	....	....	"	Good.
7	....	2	....	....	....	....	....	....	Very good	Clean; adequate.
2	....	9	Cardiac, 1	....	....	....	1	....	Good	Fair.
15	4	4	....	....	....	....	....	....	"	Clean.
17	10	9	....	....	....	....	....	Smallpox, scarlet fever, measles	"	Yes.
5	15	5	....	....	....	....	....	....	O.K.	O.K.
6	....	....	....	....	....	....	....	....	Good; adequate	Poor structure and condition.
61	2	62	Cardiac, 6; eczema eyelids, 1; lungs, 2; palate, 1; mental, 1	....	....	....	....	....	....	....
2	....	2	....	....	....	....	....	....	Good	Sanitary.
14	6	7	....	....	....	2	....	Measles, 3; scarlatina, 1	Satisfactory	Clean; adequate.
13	10	5	Slight chorea, 1; orthopædic, 1	....	....	1	....	Spinal meningitis, 1; scarlatina, 1; mumps, 20; Measles, 15	"	"
2	....	....	....	....	....	....	....	....	Poor	Dirty.
4	1	2	....	....	....	....	....	Measles	Good	Fairly clean.
1	....	....	....	....	....	....	....	....	Excellent	Clean; adequate.
24	....	5	....	....	....	....	....	....	Satisfactory	"
6	10	....	Defective speech, 2	....	....	....	....	....	"	Satisfactory.
12	6	8	Strabismus, 2	....	....	....	....	....	"	Adequate.
5	....	14	Cardiac, 1	....	....	....	....	....	Fair	Fair.
1	....	2	....	....	....	....	....	Measles	Well-lighted; ventilation good; not overcrowded	Clean; adequate
....	....	....	....	....	....	....	....	....	Good	Two; clean.
3	3	1	....	....	....	....	....	....	Room should not be used for school purposes; it is poorly ventilated, inadequately heated, and, in general, unsuitable	Two closets in repair; dirty and ill-kept.
18	2	2	Cardiac, 1	....	....	....	....	....	Excellent	Adequate.
2	....	1	Infantile paralysis, 1; ichthyosis, 1	....	....	1	....	....	Good	Yes.
3	2	1	....	2	....	....	....	Measles	"	Good.

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Canyon City	G. B. Henderson		68	66	6	....	4	1	....	6	12
Canyon Creek	C. Ewert		9	7	....	....	....	....	....	....	3
Carlin Siding	E. Buckell		20	20	3	....	....	....	....	....	1
Carrol's Landing	P. J. Emerson		13	13	1	....	....	3	3	4	7
Carson	W. Truax		26	25	4	....	1	....	4	3	6
Cartier	J. H. Hamilton		38	37	....	....	2	....	2	2	2
Cascade	W. Truax		20	20	....	....	....	....	1	2	3
Cassidy	T. J. McPhee		76	73	1	1	5	1	3	2	3
Castledale	P. Ewert		8	5	....	....	....	....	....	....	1
Castlegar	J. B. Thom		61	59	....	..	6	....	....	20	35
Castle Rock	G. R. Baker		9	9	....	....	....	....	....	....	1
Cawston	M. D. McEwen	Miss P. East	39	39	2	1	....	....	....	2	4
Cedar, East	T. J. McPhee		11	10	.	....	....	....	....	....	2
Cedar, North	"		68	62	2	1	2	2	4	5	9
Cedar, South	"		22	21	1	....	....	1	....	....	4
Cedarvale	V. Ardagh		11	9	....	....	....	....	....	....	....
Celista	W. Scatchard		15	15	....	....	2	....	....	1	1
Champion Creek	W. A. Coghlin		20	18	.	....	1	....	....	3	7
Chapman Camp	D. P. Hanington		26	24	....	....	2	1	1	1	2
Charlie Lake	W. A. Watson		12	12	....	....	1	....	2	3	3
Chase	W. Scatchard		108	99	....	....	10	....	....	23	23
Chase Creek, Lower	"		12	9	..	....	....	....	....	....	....
Chase River	T. J. McPhee		79	75	3	....	1	2	10	9	4
Chemainus	P. M. Wilson		6	5	....	....	....	....	1	1	3
Cheamview	J. C. Elliot		12	11	....	....	1	1	1	1	4
Cheracut	G. A. Charter		12	11	....	1	1	1	2	2	2
Cherry Creek	A. D. Morgan		18	17	....	....	....	....	....	....	....
Chilco	W. R. Stone		20	20	2	2	4	....	9	9	13
Chinook Cove	R. W. Irving		10	10	....	....	1	....	....	4	4
Christian Valley	A. Francis		8	8	....	....	..	....	....	....	1
Christina Lake	W. Truax		12	12	....	....	1	....	2	1	2
Chu Chua	R. W. Irving		10	10	....	..	1	.	4	4	4
Clayoquot	D. S. Dixson		47	45	....	....	3	1	1	....	3
Clearwater	C. J. M. Willoughby		10	10	....	....	3	....	....	1	3
Clinton	R. H. Mason		54	54	....	....	1	1	....	4	7
Coal Creek	W Workman		80	80	3	3	9	7	5	8	16
Coalmont	E. Sheffield		25	24	..	....	1	....	4	5	11
Cobble Hill	F. T. Stanier	Miss Naden	22	20	....	....	3	....	1	....	3
Cokato	D. Corsan		10	9	....	....	1	....	....	....	3
Columbia Gardens	J. B. Thom		12	12	....	....	....	....	1	1	12
Colwood	I. B. Hudson	Miss H. Kelly	52	50	2	3	4	2	2	3	10
Comox	T. A. Briggs		77	75	....	....	3	3	1	9	9
Concord	J. C. Elliot		10	11	....	....	..	1	....	1	3
Cooper Creek	D. J. Barclay		8	8	....	....	....	....	....	....	1
Copper City	W. N. Turpel		10	10	....	....	2	....	1	5	5
Copper Mountain	Lee Smith		40	38	....	....	1	....	3	5	7
Corbin	R. Elliot		52	52	1	1	13	8	13	13	21
Cortes Island	R. Ziegler		15	15	....	....	....	....	....	....	....
Cowichan Lake	K. I. Murray	Miss N. Armstrong	46	44	24	....	5	....	....	1	15
Cowichan Station	H. N. Watson	Miss Jeffares	62	56	9	....	3	....	9	9	12
Craigellachie	J. H. Hamilton		19	18	....	....	1	....	....	1	1
Cranberry Marsh	E. M. Sutherland		13	13	....	....	2	....	....	....	1
Crawford Bay	D. J. Barclay	Miss Garrood	29	27	....	....	8	....	7	7	11
Crawford Creek	J. H. Hamilton		10	10	....	....	....	....	....	....	1
Crescent Valley	H. H. MacKenzie		20	20	2	....	2	....	....	....	4
Creston	G. B. Henderson		214	201	7	....	27	....	....	15	29
Creston, West	"		9	9	....	....	2	....	....	2	2
Crow's Nest	R. Elliot		16	14	1	2	5	2	5	4	4
Croydon	J. Sandilands		12	12	....	1	1	1	....	....	2
Cultus Lake	J. C. Elliot		17	17	....	....	....	1	....	....	7
Darlington	R. W. Irving		10	10	....	....	1	....	....	5	5
Dawson Creek	W. A Watson		23	23	....	....	1	....	1	5	6
Dawson Creek, North	"		8	8	....	....	....	....	....	1	3
Dawson Creek, South	"		7	6	....	....	....	....	....	....	1
Deep Cove	S. E. M Hoops		10	8	....	....	2	....	....	....	....
Deep Creek	H. W. Keith		27	26	1	....	4	....	2	2	6
Deer Park	J. E. H. Kelso		13	8	....	....	1	....	....	....	1

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
8	....	11	....	....	....	....	1	Measles.....	Good.....	Clean; adequate.
5	....	....	.....	....	....	....	....	.....	Fair condition...	Fair.
7	1	2	....	....	....	....	....	....	Satisfactory	None too clean.
2	....	1	....	....	....	....	....	....	Good.....	Fair.
8	3	1	....	....	....	....	....	Typhoid fever.....	"	Clean; adequate.
3	....	11	....	....	....	....	....	....	"	Good.
3	2	....	....	....	....	....	....	....	Fair	"
5	6	2	Cardiac, 1.....	....	....	....	....	Scarlet fever.....	Defective light ...	Yes.
....	2	....	....	2	....	....	....	Whooping-cough..	Adequate	Adequate.
24	....	21	Nervous, 1; cardiac, 3	....	....	....	....	....	.....	....
....	....	....	....	....	....	....	....	....	No	Yes.
7	....	1	....	....	....	....	....	Chicken-pox epidemic...	Satisfactory	"
2	....	1	....	....	....	....	....	....	Good.....	"
13	10	7	Cardiac, 1.....	....	....	....	....	Smallpox, diphtheria....	"	"
7	4	3	....	....	....	1	....	Smallpox.....	"	"
2	....	....	....	....	....	....	....	....	Fair; frame building	One; poor.
5	....	4	....	....	....	....	....	....	Satisfactory	Not clean.
8	....	5	....	....	....	....	....	....	.....	.....
2	....	....	....	....	....	....	....	Rubella.....	Excellent	Excellent.
1	....	5	....	....	....	....	....	....	Good.....	Yes.
70	...	23	Cardiac, 1.....	....	....	....	....	....	Satisfactory	Excellent.
5	1	2	....	....	....	....	....	....	"	Fair.
14	5	15	Cardiac, 1; anæmia, 1	....	....	1	....	Smallpox..... ..	Good.	Yes.
3	2	1	Corneal ulcer, 1	....	....	....	....	....	Fair.....	Dirty.
3	1	2	....	....	....	....	....	....	"	Fair.
....	....	....	Mentally defective boy (aged 15), is a dwarf, and has congenital dislocation of both hips	....	....	....	....	....	Not crowded; well ventilated and heated	Clean; adequate.
9	....	5	Heart, 1	....	....	....	....	....	Good.....	Good.
9	....	....	....	....	....	1	....	....	"	Yes.
1	....	....	....	....	....	....	....	....	"	Two; clean.
....	8	2	....	....	....	....	....	....	O.K.....	O.K.
2	....	....	....	....	....	....	....	....	Good.	Poor.
2	....	....	....	....	....	....	....	Measles epidemic	"	Two; clean.
14	3	2	Bronchitis 1; chronic nasal catarrh, 1	....	....	1	....	Influenza, chicken-pox..	Adequately ventilated and heated; school-room filled to capacity	Clean; additional accommodation will soon be required.
1	....	3	....	....	....	1	....	....	Good.	Two; clean.
19	....	3	....	....	....	....	....	....	Heating and ventilation good	Clean; adequate.
31	5	10	Cardiac, 4; chorea, 1; bronchitis, 4	....	....	2	....	Measles, 6	Not overcrowded; poorly heated by stoves; fair ventilation	Yes; need repair.
15	....	2	....	....	....	....	....	....	Old building.....	Fair.
17	....	1	....	....	....	....	....	....	Good.....	Yes.
2	....	3	Anæmia, 1; slightly damaged hearts, 4	....	....	....	....	....	"	Clean; adequate.
4	...	10	Cardiac, 3	....	....	....	....	....	.....	....
4	4	2	Round shoulder, 2; nervous, 3; anæmia, 3	....	....	....	....	....	Excellent.....	Yes.
14	1	3	Eczema, , ; V.D.H. 1.....	....	...	....	1	....	Good..... ...	"
6	....	....	....	....	....	....	....	....	Being improved ..	Improved.
4	....	6	....	....	....	....	....	....	No.....	Yes.
4	5	3	....	....	....	....	....	....	Fairly good.	Adequate.
19	....	6	....	....	....	....	....	....	Good.....	Yes.
26	....	5	....	....	....	....	....	....	"	Good.
2	....	4	Mitral systollic, 1.....	....	....	....	....	....	Adequate.....	Adequate.
12	4	1	Measles, 1	....	....	1	....	Measles, whooping-cough	O.K.....	O.K.
12	4	....	....	....	....	....	....	Diphtheria, 5.....	Good.	Clean; adequate.
....	....	1	....	....	....	....	....	....	Poorly lighted and ventilated	Very bad.
4	3	..	Defective speech, 1	....	....	....	....	....	Satisfactory	Satisfactory.
8	....	25	Anæmia	....	....	....	....	....	No.....	Yes.
....	....	1	....	....	....	....	....	....	Good.	Good.
5	3	2	Heart, 1.....	....	....	....	....	....	"	Clean; adequate.
22	....	3	Defective speech, 1; heart, 2..	....	....	....	....	Measles.....	"	"
1	....	....	....	....	....	....	....	....	"	"
6	....	2	....	....	....	....	....	Measles.....	"	Good.
4	....	....	....	....	....	....	....	....	Fair.....	Two; fair.
9	1	2	....	....	....	....	....	....	Too small.	Poor.
1	....	....	....	....	....	....	....	....	Good.....	Two; clean.
9	....	4	....	....	....	....	....	....	Fair	Yes.
1	....	4	....	....	....	....	....	....	Good.	"
1	....	2	....	....	....	....	....	....	Fair	"
4	....	....	....	....	....	....	....	....	Excellent.	"
8	....	....	....	....	....	....	....	....	Good.....	"
3	....	....	....	....	....	....	....	....	"	"

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Demars, West	P. J. Emerson		10	10	....	....	1	1	2	2	6
Denman Island	T. A. Briggs		54	50	....	1	4	2	5	7	9
Departure Bay	T. A. McPhee		10	9	....	....	....	....	2	1	1
Dewdney	A. J. Stuart		82	74	1	....	3	....	....	3	20
Diamond Crossing	H. B. Maxwell	Miss Hewertson	31	31	1	1	1	....	2	2	9
Divide	E. M. Sutherland		18	18	....	....	2	....	1	....	5
Dome Creek	J. Sandilands		20	20	3	1	1	1	1	1	14
Doreen	V. E. R. Ardagh		8	8	1	....	....	....	1	....	....
Doriston	F. Inglis		6	6	....	....	....	....	....	1	....
Dorr	H. A. Christie		13	13	....	....	....	....	2	2	4
Dove Creek	T. A. Briggs		26	24	....	....	2	....	1	4	4
Driftwood	C. H. Hankinson		20	20	....	....	....	2	....	....	6
Ducks Range	R. W. Irving		10	10	....	....	....	....	....	1	1
Dundon	R. H. Mason		12	12	....	....	....	....	....	....	5
Dunster	J. Sandilands		10	10	....	....	1	....	....	1	3
Eagle Valley	E. Buckell		15	11	....	....	....	3	2	2	1
Echo Bay	C. A. Watson		11	9	....	....	5	....	....	1	2
Edgewater	F. E. Coy		19	19	1	....	1	....	....	....	....
Edgewood	J. E. H. Kelso		35	35	....	....	1	1	....	2	1
Egmont	F. Inglis		16	16	....	....	3	....	....	7	8
Elk Bridge	F. J. Buckley		18	18	....	....	....	....	....	2	4
Elko	H. A. Christie		28	19	....	....	....	....	7	7	6
Elk Valley	F. J. Buckley		7	7	....	....	....	....	....	....	1
Ellison	W. J. Knox		35	32	2	....	5	....	4	3	5
Elphinstone Bay	F. Inglis		13	13	....	....	1	....	....	7	1
Endako	W. R. Stone		17	17	....	....	....	....	7	7	11
Enderby, North	H. W. Keith		16	15	3	....	1	....	1	1	3
Engen	W. R. Stone		11	11	....	....	....	....	3	3	3
Erickson	G. B. Henderson		50	49	....	1	3	....	....	2	9
Erie	J. B. Thom		9	9	....	....	1	1	....	....	3
Errington	L. T. Davis	Miss Jukes	27	27	....	....	....	....	....	....	....
Essington	R. Large		35	28	3	....	1	2	1	3	19
Evelyn	C. H. Hankinson		22	22	1	....	1	....	1	....	3
Ewing's Landing	W. J. Knox		15	15	2	1	3	....	3	3	4
Extension	H. B. Maxwell	Miss Hewertson	80	80	3	....	4	....	....	....	12
Fairview	G. H. Kearney		12	11	....	....	1	....	....	....	....
Falkland	P. D. Van Kleeck		24	23	....	....	1	....	6	15	19
Fanny Bay	G. K. MacNaughton		43	41	5	....	5	1	1	2	12
Fauquier	J. E. H. Kelso		8	8	....	1	1	....	....	....	3
Field	G. A. Cheeseman		63	61	....	1	2	....	....	2	7
Fife	W. Truax		22	22	2	....	....	....	5	2	3
Fire Valley	J. E. H. Kelso		11	8	....	....	1	1	....	....	....
Firvale	G. E. Bayfield		11	11	2	1	1	....	2	2	2
Fir Valley	W. J. Knox		9	8	1	....	1	....	1	1	2
Fish Lake	C. J. M. Willoughby		14	11	1	....	1	....	1	1	3
Flagstone	H. A. Christie		15	15	....	....	....	....	....	....	5
Forest Grove	F. V. Agnew		11	7	....	....	....	....	....	....	....
Ford	P. Ewert		10	9	....	....	....	....	....	....	1
Forks	R. W. Irving		16	16	....	....	3	....	2	3	3
Fort Fraser	W. R. Stone		41	41	....	....	2	....	13	13	15
Fort Fraser, North	"		6	6	....	....	....	1	....	....	....
Fort George	C. Ewert		44	42	2	1	4	1	8	8	9
Fort George, South	"		62	59	1	1	12	1	6	6	11
Fort St. James	W. R. Stone		15	15	....	....	....	....	4	4	5
Fort St. John	W. A. Watson		25	24	....	....	2	1	5	5	6
Fort St. John, East	"		10	9	....	....	....	....	....	1	3
Fort Steele	F. W. Green		49	49	....	....	....	....	....	....	3
Four Mile	W. J. Lightburne		7	7	....	....	1	....	....	....	....
Francois, North	D. B. Lazier		12	12	....	....	....	....	1	2	3
Francois, South	"		20	20	....	....	2	....	2	1	3
Fraser Lake	W. R. Stone		18	18	....	....	....	....	2	2	4
Fraser Lake, North	"		10	10	....	....	....	....	3	3	5
French Creek	L. T. Davis	Miss Jukes	40	40	1	....	1	....	1	....	....

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
4	....	8	Cardiac, 1	....	....	....	....	....	Good	Fair.
8	...	3	Xerodermia, 1	...	...	....	....	....	"	Yes.
2	1	2	.....	...	...	....	....	.....	Old	Clean; adequate.
21	2	12	.....	....	...	...	...	Measles, 12	Very good	"
19	....	....	Orthopædic, 1; eczema, 1	....	....	....	....	....	Efficient	Yes.
7	3	2	Rachitic chest, 1	....	....	....	....	....	Satisfactory	Not satisfactory.
12	3	5	.....	....	....	....	1	.....	Good	Two; good.
6	....	....	.....	....	....	....	....	.....	Poorly built frame shack	Two; yes.
3	....	....	.....	....	....	...	....	.....	Good	Inadequate; clean.
7	....	1	.....	....	....	....	....	.....	Satisfactory	Clean; adequate.
2	....	....	Epileptic, 1	....	....	....	....	.....	Good	Yes.
3	3	....	Nasal spur, 1	....	....	....	....	.....	"	"
....	....	....	.....	....	....	....	....	.....	"	Two; clean.
....	....	....	Nervous, 2; discharging ear, 1	....	...	....	....	.....	Small; low ceiling; poor light	One toilet; no door.
3	....	....	.....	....	....	....	....	.....	Fair	Two; fair.
6	....	1	.....	....	....	...	....	.....	Satisfactory	Yes.
7	....	....	.....	....	....	....	....	.....	Good	Clean; adequate.
3	...	1	.....	....	....	....	....	.....	"	Sanitary.
3	....	....	.....	....	....	....	....	.....	"	Yes.
9	....	....	.....	..	....	....	....	.....	"	"
7	3	5	.....	....	....	....	1	.....	.....	.....
10	....	....	.....	....	....	....	....	.....	Satisfactory	Clean; adequate.
2	2	2	.....	....	....	....	....	.....	.....	.....
8	3	6	Orthopædic, 1; anæmia, 1; chronic eczema, 1	....	....	....	....	.....	Good	Sanitary; adequate.
9	....	....	.....	....	....	....	....	.....	"	Yes.
13	....	....	.....	....	....	....	....	.....	"	"
5	....	1	.....	....	....	....	....	.....	"	"
7	....	....	.....	....	....	....	....	.....	"	"
4	..	....	.....	....	....	....	....	Measles	"	Clean; adequate.
4	1	1	.....	....	....	....	....	.....	.....	.....
5	1	1	.....	....	....	....	....	Measles, chicken-pox	Very good	Clean; adequate.
24	....	....	.....	....	....	....	....	.....	Good	"
6	5	....	Colds, 1	....	....	....	....	.....	Too little air	Yes.
5	2	3	Chorea, 1; cardiac, 1; eczema, 1; lack of bladder control, 1; anæmia, 2	...	....	....	....	Nil, except flu	Good	Sanitary; adequate.
17	....	3	Cardiac, 2; Still's disease, 1; psoriasis, 1	....	..	....	....	.....	Efficient	Yes.
4	1	2	.....	....	....	....	....	Chicken-pox, 2	.....	Clean; adequate.
7	....	14	.....	....	....	....	....	.....	Good	Yes.
28	8	2	Impediment in speech, 1; anæmia, 2; headaches, 1; nerve disease, 1; nasal catarrh, 3; wax in ears, 4; skin-disease, 2; blepharitis, 1	....	....	....	....	.....	O.K.	Clean; adequate.
....	....	1	.....	..	....	....	....	Influenza	Fair	Yes.
24	1	1	.....	....	....	....	....	Scarlet fever, measles	Up to date	Both.
4	3	1	.....	....	1	...	1	.....	Fair	Bad.
1	...	...	.....	...	...	...	...	.....	Good	Yes.
4	....	4	.....	....	....	....	....	.....	"	Good.
3	1	2	Curvature of spine, 1; anæmia, 1; cardiac, 1	....	....	....	....	.....	Poorly heated; building not lined	Clean; adequate.
3	....	....	Orthopædic, 2; bronchitis, 1	....	....	....	....	.....	Frame; in need of repair; windows on wrong side	"
9	...	....	.....	....	....	....	....	.....	Satisfactory	"
1	....	....	.....	....	....	....	....	.....	Temporary building	Yes.
1	....	...	Bronchitis, 1	....	....	....	....	.....	Uncompleted	Adequate.
2	....	....	Amputated foot, 1	...	...	....	....	Measles epidemic	Good	Two; clean.
25	....	5	Cardiac, 1	....	....	....	....	.....	Crowded	Yes.
1	....	....	.....	....	....	....	....	.....	Good	"
18	1	8	Blepharitis, 2	....	...	...	....	.....	"	Clean; adequate.
30	1	15	Blepharitis, 5	..	....	....	....	.....	Old frame building in only fair condition	Fair.
10	...	....	.....	....	....	....	....	.....	Good	Yes.
10	1	12	.....	....	....	....	....	.....	"	Fair.
7	....	3	.....	....	....	....	....	.....	Fair	Yes.
2	....	3	.....	....	....	....	....	.....	Good	Clean.
3	....	....	.....	....	....	....	....	.....	Satisfactory	Clean; adequate.
....	...	3	.....	....	....	....	....	.....	Good	Clean.
....	....	3	.....	....	....	....	....	.....	"	"
11	....	....	.....	....	....	....	....	.....	"	Yes.
6	....	..	.....	....	....	....	....	.....	"	"
5	...	....	.....	...	....	....	....	Measles, chicken-pox	Very good	Clean; adequate.

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Fruitlands	R. W. Irving	....	90	88	1	1	10	....	6	21	22
Fruitvale	J. B. Thom	....	48	40	....	....	5	...	....	....	15
Galena Bay	J. H. Hamilton	....	8	8	....	....	....	....	....	....	1
Galiano, North	E. M. Sutherland	....	18	18	....	....	....	...	3	3	3
Galiano, South	C. H. West	....	19	19	....	...	....	....	....	....	2
Gallie Bay	R. E. Ziegler	....	9	9	....	1	....	....	....	....	....
Ganges	E. M. Sutherland	....	67	66	....	....	2	....	1	1	1
Georgetown	R. G. Large	....	11	11	2	....	4	1	3	3	4
Gibson Creek	H. H. MacKenzie	....	18	18	2	..	1	...	1	1	5
Gill	A. D. Morgan	....	22	22	..	....	....	....	....	....	5
Gillies Bay	Kingsley Terry	....	11	10	3	....	1	2	....	....	6
Giscome	W. E. Laishley	....	56	53	7	11	3	...	5	5	21
Glacier	J. H. Hamilton	....	6	6	...	....	...	....	....	....	1
Glade	H. H. MacKenzie	....	59	56	10	....	1	....	....	6	21
Glenbank	P. J. Emerson	....	40	40	....	...	....	....	3	3	27
Glenemma	P. D. van Kleeck	....	12	11	....	...	3	....	6	9	10
Glenora	H. N. Watson	Miss Jeffares	18	15	...	....	....	...	2	2	3
Glenrosa	W. Buchanan	....	10	10	....	....	1	...	....	....	1
Glentanna	C. H. Hankinson	....	6	6	....	....	....	1	....	....	2
Golden	P. Ewert	....	132	124	4	7	10	...	6	10	20
Goldstream	I. B. Hudson	Miss H. Kelly	20	16	1	....	1	1	2	2	5
Gowland Harbour	R. E. Ziegler	....	10	10		....	2	...	1	1	1
Granby Bay	D. R. Learoyd	....	158	158	22	..	30	1	1	4	54
Grandview Bench	H. W. Keith	....	20	18	....	....	4	....	2	2	6
Granite Bay	C. A. Watson	....	6	5	....	....	....	....	....	..	1
Grantham	T. A. Briggs	....	27	27	....	....	....	2	2	2	2
Grant Mine	T. J. McPhee	....	27	24	1	....	....	...	3	1	....
Grassmere	H. A. Christie	....	10	10	....	....	....	....	3	3	4
Gray Creek	D. J. Barclay	Miss Garrood	9	8	....	....	1	...	1	1	1
Great Central	A. D. Morgan	....	16	15	....	..	....	....	....	....	4
Green Bay	G. E. Bayfield	....	17	17	1	1	2	....	3	3	3
Green Lake	R. H. Mason	....	15	15	...	...	....	....	....	....	4
Greenslide	J. H. Hamilton	....	14	14	....	....	2	...	1	1	2
Grey's Creek	C. A. Watson	....	10	10	...	....	1	....	...	1	2
Grindrod	H. W. Keith	....	67	63	4	...	20	....	5	5	20
Hall	H. H. MacKenzie	....	7	6	....	....	....	....	....	2	2
Hall's Landing	J. H. Hamilton	....	13	12	....	....	....	....	....	....	....
Happy Valley	I. B. Hudson	Miss H. Kelly	27	24	....	....	....	....	....	2	5
Hardwick Island	C. A. Watson	....	9	9	....	....	1	....	....	....	4
Harewood	T. J. McPhee	....	344	336	11	2	11	4	51	44	57
Harrogate	Paul Ewert	....	11	10	....	....	2	....	1	....	3
Harrop	H. H. MacKenzie	Miss Garrood	31	31	7	4	4	...	....	1	8
Hatzic Prairie	A. J. Stuart	....	20	18	....	....	....	....	....	2	3
Hazelton	Wm. J. Lightburne	....	27	27	....	....	....	....	....	5	5
Hazelton, New	"	....	27	27	....	1	....	....	1	1	1
Headquarters	T. A. Briggs	....	32	31	....	....	2	3	7	9	11
Hedley	M. D. McEwen	....	58	56	....	....	1	....	....	2	2
Heffley Creek	R. W. Irving	....	8	8	....	....	....	....	....	2	2
Heffley Creek, Upper	"	....	8	8	....	....	....	....	....	....	....
Hendon	P. D. van Kleeck	....	10	8	....	....	....	....	3	6	7
Heriot Bay	R. E. Ziegler	....	12	12	....	....	....	....	....	1	1
Hillcrest	H. W. Keith	....	15	15	....	....	4	....	1	1	3
Hilliers	L. T. Davis	Miss Jukes	19	19	....	....	....	....	....	....	....
Hilltop	W. Truax	....	14	14	....	....	....	....	1	1	2
Hilton	H. G. Williams	....	9	9	....	....	....	....	....	....	....
Hope	J. C. Elliot	....	69	67	....	....	2	7	1	5	16
Hornby Island	T. A. Briggs	....	12	12	....	....	2	....	2	4	4
Horse Creek	Paul Ewert	....	17	11	....	...	1	....	1	....	5
Hosmer	D. Corsan	....	36	32	....	...	1	1	1	1	13
Houston	C. H. Hankinson	....	17	17	....	....	1	....	3	....	2
Howe Sound	F. Inglis	....	105	93	4	....	5	2	...	19	24
Hudson's Hope	W. A. Watson	....	15	15	....	....	....	....	1	3	5
Hulatt	W. R. Stone	....	11	11	....	....	....	...	1	1	4
Hunter Island	G. A. Roberts	....	7	7	....	....	....	....	....	1	....
Hupel	H. W. Keith	....	9	9	....	....	2	....	1	1	2
Huscroft	G. B. Henderson	....	22	22	....	....	2	....	....	1	4
Hutton	W. E. Laishley	....	27	26	3	2	3	2	4	4	10

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
10	1	7	Asthma, 1	....	....	....	....	....	Good.....	Two; clean.
15	..	5	Cardiac, 3.....	....	....	....	....	....	.....	.....
...	....	....	Orthopædic, 1	....	....	....	....	....	Good.....	Good.
10	3	....	....	....	1	....	....	....	Satisfactory.....	Satisfactory.
13	....	..	....	....	....	....	....	....	Well ventilated; comfortably heated	Clean; adequate.
....	..	....	Cardiac, 1	..	..	....	..	....	Adequate.....	Adequate.
15	2	6	....	....	....	....	....	....	Satisfactory	Satisfactory.
10	6	1	.. ..	....	....	....	....	....	Good.....	Clean; adequate.
9	2	4	Orthopædic, 1; anæmia, 1.....	....	....	....	....	....	"	"
9	....	1	Heart, 1.....	....	....	....	....	....	"	Good.
9	6	6	Nervous, 1.....	....	....	....	1	....	Building O.K. ...	O.K.
31	4	....	Cardiac, 1.....	....	....	....	....	Influenza..	Not crowded; ventilation and heating good	Outside toilets in fair condition.
....	....	....	....	..	..	..	..	....	Good.....	Good.
13	3	17	Heart cases, 4; spinal curvature, 1	....	....	....	....	....	"	Poor.
20	....	18	Chorea, 3; cardiac, 2.....	....	....	....	....	....	Very good.....	Fair.
3	....	5	....	....	....	....	....	....	Good.....	Yes.
....	....	....	....	....	....	....	....	....	"	Clean; adequate.
1	....	9	....	....	....	....	....	....	Satisfactory	"
3	2	....	....	....	....	....	....	....	Fair.....	Yes.
24	6	10	Eczema, 5; epilepsy, 1.....	....	....	..	....	Whooping-cough	Good.....	Adequate.
5	3	....	Squint, 2; cardiac, 1; nervous, 1	....	....	....	....	....	Rather crowded..	Fair.
4	....	2	....	....	....	....	....	....	Adequate.....	Adequate.
40	102	77	Hernia, 1; flat chest, 12; acne, 1; asthma, 1; bronchitis, 1; spinal curvature, 1	....	....	....	....	....	Satisfactory.....	Clean; adequate.
7	..	1	....	....	....	....	....	....	Good.....	Yes.
4	...	2	....	....	....	....	....	....	Light poor	Clean; adequate.
3	..	....	....	....	....	....	....	....	Good.....	Yes.
3	....	2	Cardiac, 1	2	....	....	....	Scarlet fever, 2	"	"
3	....	1	....	....	....	....	....	....	Very satisfactory.	Clean; adequate.
4	....	8	....	....	....	....	....	....	No	Yes.
4	...	3	Heart, 1.....	....	....	....	....	....	Good..... ...	Good.
4	....	2	....	....	....	....	....	....	"	"
3	....	....	....	....	....	....	....	....	Crowded	Inadequate.
1	...	2	....	....	....	....	....	....	Good.....	Good.
7	....	....	.. ..	....	....	....	....	....	"	Clean; adequate.
23	....	4	....	....	2	1	1	....	Fair.....	Fair.
4	..	2	....	....	....	....	....	....	Good.....	Poor.
....	....	1	....	....	....	....	....	....	"	Good.
4	....	1	Round shoulder, 1; boils, 1....	....	....	....	..	....	Excellent.....	Yes.
7	....	....	....	....	....	....	....	....	Fair.....	Clean; adequate.
73	50	28	Cardiac, 4; nervous, 4.....	1	4	2	....	Smallpox, scarlet fever, diphtheria, measles	Good.....	Yes.
1	..	1	....	....	....	....	....	Whooping-cough	"	Clean.
12	3	10	Heart, 1; spinal curvature, 1..	....	....	1	....	Chicken-pox, 14	"	Clean; adequate.
3	....	....	....	....	....	....	....	....	Most satisfactory..	"
12	...	....	....	....	....	....	....	Pertussis.	Heating facilities in cold weather inadequate	"
8	....	....	....	....	....	....	....	....	Satisfactory	"
7	....	1	Orthopædic, 1.....	....	....	....	....	....	Good.....	Yes.
4	....	....	....	....	....	....	....	Chicken-pox, 5	Satisfactory	"
....	...	...	....	....	....	....	....	....	Good.....	Two; clean.
....	..	....	....	....	....	....	....	....	Poor	"
3	....	....	....	....	....	....	....	....	Good.....	Yes.
3	2	....	Cardiac, 1	....	....	....	....	Mumps.....	Adequate	Adequate.
4	...	1	....	....	....	....	....	....	Good.....	Yes.
..	....	....	....	....	....	....	....	Measles, chicken-pox ...	Very good.....	Clean; adequate.
2	....	....	....	....	....	....	....	....	Good.....	Good.
....	....	....	....	....	....	....	....	....	"	"
41	6	2	Special curvature, 1.....	....	....	....	....	....	"	"
3	....	1	....	....	....	....	....	....	"	"
2	....	....	Cardiac, 1.....	....	....	....	....	Scarlet fever, whooping-cough	"	Adequate.
16	....	10	Anæmia, 1; slightly damaged hearts, 6; epileptic, 1	....	....	....	....	Roetheln, 3	"	Clean; adequate.
2	4	1	Nasal spurs, 3	...	..	....	....	....	"	Yes.
54	....	3	....	....	....	....	....	Measles	"	"
8	....	6	....	....	....	....	....	....	Fair.....	"
5	....	..	....	....	....	....	....	....	Good.....	"
....	....	1	....	....	....	....	...	Whooping-cough	"	"
2	....	....	....	....	....	....	....	....	Fair.....	"
1	....	2	....	....	....	....	....	....	Good.....	Clean; adequate.
19	3	1	....	....	....	....	....	....	Not crowded; ventilation good; heating poor	Good.

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Ingersoll Mountain	P. J. Emerson		10	8	....	....	....	....	....	2	6
Ingram Mountain	A. Francis		9	9	....	....	....	....	....	....	3
Ioco	C. R. Symmes		118	112	3	....	6	....	7	7	16
Irving's Landing	A. Henderson		15	13	2	....	1	....	....	....	2
Isabella Point	E. M. Sutherland		12	12	....	....	....	....	2	2	2
Jaffray	H. A. Christie		31	29	1	....	5	....	6	4	8
James Island	S. E. M. Hoops		55	44	2	....	2	2	6	6	16
Jesmond	R. H. Mason		9	9	1	1	1	....	....	3	6
Joe Rich	W. J. Knox		10	10	2	....	1	....	2	2	3
Johnson's Landing	D. J. Barclay		6	6	....	....	1	....	....	....	3
Jordan River	I. B. Hudson		9	9	2	....	....	1	....	2	2
Jura	Lee Smith		13	13	....	..	1	....	....	....	2
Kaleden	H. McGregor		18	18	1	1	1	....	..	....	1
Kaleva	C. A. Watson		13	13	1	1	3	....	2	3	3
Keefers	P. M. Wilson		10	10	....	....	....	....	1	1	3
Kelly Creek	A. Henderson		9	9	....	....	....	....	....	....	....
Kelowna, East	W. J. Knox		70	61	4	2	7	1	6	5	7
Kelowna, South	"		15	13	2	....	4	....	2	2	3
Keremeos	M. D. McEwen	Miss P. East	82	82	....	2	1	....	....	4	4
Kerr Creek	A. Francis		12	12	....	....	....	....	....	...	4
Kettle River, North	W. Truax		10	10	1	....	....	....	2	1	2
Kettle Valley	A. Francis		14	14	....	....	....	....	....	....	4
Kildonan	A. D. Morgan		15	15	....	....	1	....	....	....	3
Killarney	Lee Smith		8	7	....	....	....	....	2	2	3
Kimberley	D. P. Hanington		418	415	1	1	15	2	8	8	12
Kincolith	D. J. McDonald		12	12	....	....	....	....	....	....	2
Kingcome Inlet	C. A. Watson		8	8	....	....	....	....	....	....	....
Kingsgate	G. B. Henderson		12	12	....	....	1	....	....	....	2
Kinnaird	J. B. Thom		8	6	....	....	....	....	....	....	1
Kispiox	W. J. Lightburne		11	11	....	....	....	....	....	....	....
Kitchener	G. B. Henderson		39	39	3	....	6	....	....	5	10
Kitsumgallum	W. N. Turpel		155	147	5	....	14	....	5	28	45
Kitwanga	V. E. R. Ardagh		13	10	....	....	....	....	1	1	1
Koksilah	H. N. Watson	Miss Jeffares	18	13	1	....	....	....	....	....	....
Krestova	H. H. MacKenzie		31	30	4	....	1	....	....	....	13
Lackenby	R. W. Irving		15	15	....	....	2	2	....	3	3
Lac la Hache	F. V. Agnew		8	7	1	....	....	....	....	....	1
Lakelse Valley	W. N. Turpel		13	4	....	....	1	....	1	1	1
Lakes District	W. R. Stone		11	11	....	....	1	....	2	2	6
Lang Bay	A. Henderson		19	17	3	....	2	....	....	1	5
Langford	I. B. Hudson	Miss H. Kelly	51	51	3	2	3	....	2	2	12
Larchwood	F. W. Green		10	10	....	....	....	....	....	....	....
Lawn Hill	G. H. Bleecker		9	9	....	....	....	....	....	1	1
Lazo	T. A. Briggs		41	36	....	3	3	1	3	7	7
Lee	J. Sandilands		9	9	....	....	3	....	....	....	....
Lee Creek	W. Scatchard		7	7	....	....	....	....	....	4	4
Lillooet	A. C. Nash		66	59	....	....	....	....	1	1	1
Lindell	J. C. Elliot		27	27	....	....	1	5	2	2	7
Lister	G. B. Henderson		23	22	1	....	1	....	....	1	4
Little Fort	R. W. Irving		36	36	....	....	2	....	....	6	6
Lone Butte	R. H. Mason		17	17	2	..	1	....	2	2	2
Long Beach	H. H. MacKenzie	Miss Garrood	16	16	1	....	3	....	....	1	5
Long Lake	R. W. Irving		17	17	....	....	....	....	....	....	....
Longworth	W. E. Laishley		24	23	8	8	3	....	8	8	12
Loos	J. Sandilands		16	16	....	....	....	....	....	....	5
Loos, West	"		9	9	....	....	....	....	....	....	4
Louis Creek	R. W. Irving		12	12	....	....	4	....	....	1	1
Lumberton	F. W. Green		57	56	....	....	3	....	1	....	4
Lumby	H. G. Williams		77	77	....	....	....	....	....	....	14
Lund	R. E. Ziegler		30	30	....	1	....	....	2	4	4
Lytton	P. M. Wilson		29	28	....	....	1	....	3	3	7
Mable Lake	H. G. Williams		13	13	....	....	....	....	....	....	2
Magna Bay	W. Scatchard		15	12	....	....	2	....	....	....	....
Malakwa	J. H. Hamilton		39	36	....	....	....	....	1	3	6
Malcolm Island	C. A. Watson		61	61	....	1	8	....	3	16	29
Mapes	W. R. Stone		12	12	....	....	1	....	6	6	7

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
1	....	4	.....	....	....	....	....	.....	Fair.....	Fair.
....	5	3	Cardiac, 2	....	....	....	....	.....	O.K.	O.K.
15	5	20	Infantile paralysis, 2	1	3	1	....	Whooping-cough, 25 ...	Excellent	Excellent.
....	....	....	.....	....	....	....	....	Whooping-cough	Good	Good.
6	2	....	.....	....	....	....	....	.....	Satisfactory	Satisfactory.
10	....	....	.....	....	....	....	....	.....	"	Clean; adequate.
27	6	2	.....	....	....	....	....	.....	Good.....	Yes.
2	....	....	.....	....	....	....	....	.....	Fair; log building	Two; need repair.
4	2	4	Anæmia, 1; curvature of spine, 1	....	....	....	....	.....	Good.....	Sanitary; adequate.
2	....	6	Anæmia, 2	....	....	....	....	.....	No	Yes.
3	3	....	Round shoulder, 1; anæmia, 2; epistaxis, 1	....	5	....	....	.....	Satisfactory	Improved.
....	....	4	.....	....	....	....	....	.....	Good.	Yes.
2	...	2	Nervous, 1	....	....	....	....	Chicken-pox, influenza..	"	Good.
8	....	3	.....	....	....	....	....	Influenza, 2	"	Clean; adequate.
2	1	1	.....	....	....	....	....	.....	"	"
....	2	....	.....	....	....	....	....	.....	"	Good.
10	4	9	Diabetes, 1; chorea, 3; curvature of spine, 2; cardiac, 2; infantile paralysis, 1; bronchial catarrh, 2	....	....	....	....	.....	Excellent	Clean; fairly adequate.
4	...	2	Rupture, 1; anæmia, 1; curvature of spine, 1	....	....	....	....	.....	Good.....	Sanitary; adequate.
20	...	....	Mitral regurgitation, 1.....	....	....	....	....	Measles, 2; scarlet fever, 2	Satisfactory	Yes.
1	8	2	.....	....	....	....	....	.....	O.K.	O.K.
2	2	1	.....	....	....	....	....	.....	Poor	Fair.
1	7	2	Cardiac, 1	....	....	....	....	.....	O.K.	O.K.
10	....	10	.....	....	....	....	....	.....	Good.....	Good.
2	....	3	.....	....	....	....	....	.....	"	Yes.
25	....	3	.....	....	...	2	....	Rubella	Should be two janitors	.....
2	....	....	.....	....	....	....	....	.....	Satisfactory..	Satisfactory.
6	....	....	.....	....	....	....	....	.....	Good.	Clean; adequate.
3	....	....	.....	....	....	....	....	.....	"	"
5	....	1	Pulmonary, 1.	....	....	....	....	.....	.....	.....
4	....	....	.....	....	....	....	....	.....	Satisfactory	One; adequate.
3	....	2	.....	....	....	....	....	.....	Good...	Clean; adequate.
68	21	31	Crypt orchid, eczema, arm vulgaris, chorea	....	..	....	...	.....	"	Fair.
5	....	1	.....	....	....	....	....	.....	Frame building; good condition	Two; yes.
6	....	....	.....	....	....	....	....	.....	Good.....	Clean; adequate.
15	1	17	.....	....	....	....	....	.....	"	Bad.
....	....	....	.....	....	....	....	....	.....	Good.....	Two; clean.
1	3	....	.....	....	....	....	....	.....	"	Yes.
4	1	2	.....	....	....	....	....	.....	"	Poor condition.
9	....	....	.....	....	....	....	....	.....	"	Yes.
....	1	2	.....	....	....	....	....	.....	"	Good.
5	10	....	Round shoulder, 3; cardiac, 1; anæmia, 2; nasal polyp., 1	....	....	....	...	Measles, 1; scarlet fever 1	Excellent	Yes.
....	....	1	.....	....	....	....	....	.....	Good.....	Clean.
....	....	....	.....	....	....	....	....	.....	Fair	Poor.
9	....	1	.....	....	....	....	....	.....	Good.....	Yes.
....	....	....	.....	....	....	....	....	.....	Fair	Two; fair.
7	...	2	.....	....	....	....	....	.....	Satisfactory.	Satisfactory.
26	11	2	Cardiac, 2	....	....	....	....	.....	Full..	Clean; adequate.
18	1	1	Chorea, 1.....	....	....	....	....	.....	Good.....	One; fair.
1	....	1	.....	....	....	....	....	.....	"	Clean; adequate.
2	....	1	.....	....	....	....	....	Epidemic of scarlet fever	"	Two; clean.
3	....	....	Bronchial	....	....	....	...	.....	Conditions good..	Adequate.
5	2	1	.....	....	....	....	....	.....	Good.....	Clean; adequate.
....	....	....	.....	....	....	....	....	Measles epidemic	"	Two; clean.
13	6	2	.....	....	....	....	....	Influenza, German measles	Building in rather poor shape; not crowded	Outside toilets in fair condition.
3	....	4	.....	....	....	....	....	.....	Fair	Two; fair.
5	....	....	.....	....	....	....	....	.....	"	"
....	....	....	.....	....	....	....	....	.....	Good.....	Two; clean.
5	....	9	Cardiac, 2; deviated nasal, 1..	....	....	....	....	.....	"	Clean.
5	....	3	.....	....	....	....	....	.....	"	Good.
1	1	3	.....	....	....	....	....	Measles, pertussis.....	Fair.....	Adequate.
10	6	12	.....	....	....	1	....	Mumps, 4.....	Good.....	Boys' dirty.
....	....	1	.....	....	....	....	....	.....	Not good.....	Good.
4	....	3	.....	....	....	....	....	.....	Satisfactory	Satisfactory.
2	....	2	.....	....	....	....	....	Whooping-cough, scarlet fever	Good.....	Good.
48	1	8	.....	....	....	....	....	Influenza, 5	Light poor	Clean; adequate.
7	....	...	.....	....	....	....	....	.....	Good.....	Yes.

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Mara	H. W. Keith		69	62	1	1	7	....	3	3	18
Marten Lake	W. R. Stone		12	12	1	....	....	....	1	1	3
Martin's Prairie	R. W. Irving		29	29	2	4	3	....	....	4	4
Marysville	D. P. Hanington		21	20	...	1	4	....	....	....	....
Masset	J. C. Dunn		17	17	....	....	....	....	....	....	1
Mayne Island	C. H. West		21	18	3	....	1	....	....	1	9
Mayo	H. N. Watson	Miss Jeffares	12	11	....	....	....	....	1	1	....
Mayook	H. A. Christie		17	15	....	....	1	....	3	3	4
Meadowbrook	D. P. Hanington		15	15	....	....	1	..	....	...	4
Meadow Spur	J. D. Thom		17	17	....	...	1	....	....	...	2
Meadow Valley	F. W. Andrew		9	9	1	....	....	....	3	3	3
Medora Creek	H. G. Williams		9	9	....	....	....	....	....	....	1
Menzies Bay	R. Ziegler		13	13	....	....	1	...	2	2	2
Merville	T. A. Briggs		44	41	..	....	2	3	3	10	10
Metchosin	I. B. Hudson		30	30	1	1	2	....	....	2	6
Michel	F. J. Buckley		165	164	7	8	2	3	37	40	33
Midway	A. Francis		37	37	1	1	3	....	....	....	7
Mill Bay	F. T. Stanier	Miss Naden	24	22	...	....	1	....	1	1	3
Minto	G. K. MacNaughton		43	43	5	....	5	2	2	1	6
Mirror Lake	D. J. Barclay		7	7	....	....	3	...	1	1	1
Mission Creek	W. J. Knox		59	55	2	1	4	...	6	5	7
Moberly	Paul Ewert		8	8	...	....	1	1	...	....	3
Mohun Lake	R. E. Ziegler		7	7	....	....	....	....	....	....	....
Monte Creek	R. W. Irving		11	11	...	....	....	....	....	....	2
Montrose	L. T. Davis	Miss Jukes	10	10	....	....	....	....	....	....	....
Morrissey Mines	D Corsan		12	10	....	....	....	....	....	....	6
Mountain	T. J. McPhee		61	58	3	....	2	1	7	6	15
Mount McPherson	J. H. Hamilton		13	12	...	....	....	....	....	...	....
Moyase	F. W. Green		20	18	...	....	1	....	1	...	4
Moyie	"		66	60	....	....	....	....	...	1	9
Mud River	C. Ewert		11	9	....	....	....	....	1	1	1
Muncaster	A. Francis		7	7	....	....	....	....	....	....	....
Myrtle Point	A. Henderson		18	18	2	....	1	....	....	....	3
Macalister	F. V. Agnew		7	7	...	....	1	....	....	....	2
McBride	J. Sandilands		66	66	1	...	13	4	2	2	18
McConnell Creek	A. J. Stuart		18	16	....	....	....	....	....	1	2
Mackenzie	G. E. Bayfield		11	11	....	1	....	....	2	2	2
McClure	C. J. M. Willoughby		9	9	1	....	....	....	....	..	2
McMurdo	Paul Ewert		15	13	....	1	....	....	....	....	1
Nakusp	P. J. Emerson		108	108	....	....	2	6	6	12	62
Nanaimo Bay	T. J. McPhee		94	90	3	1	4	2	11	11	7
Nanoose Bay	L. T. Davis	Miss Jukes	16	16	....	....	1	....	....	....	....
Naramata	F. W. Andrew		59	52	4	2	3	...	6	12	12
Needles	J. E. H. Kelso		9	9	....	....	2	1	...	....	3
New Denver	Wm. E. Gomm		74	74	....	....	4	....	.	....	22
Newgate	H. A. Christie		15	15	...	....	....	....	7	7	7
Newlands	W. E. Laishley		14	12	2	1	1	....	1	1	2
New Michel	F. J. Buckley		187	185	4	3	4	2	12	14	42
Nickel Plate Mine	M. D. McEwen		11	11	....	....	1	....	3	3	3
Nicola	J. J. Gillis		13	12	1	1	1	....	2	2	3
Nicola, Lower	"		26	16	1	2	2	....	4	4	4
Nicomen	A. J. Stuart		37	34	2	2	1	..	...	2	16
Nicomen, North	"		33	28	....	....	1	....	1	5	11
Nimpkish	C. A. Watson		18	17	....	....	5	....	2	7	6
Nob Hill	T. A. Briggs		7	5	....	....	....	....	....	....	....
Noble Creek	R. W. Irving		7	7	...	....	1	....	1	2	2
Noosatsum	G. E. Bayfield		9	9	3	....	2	....	4	4	4
North Bend	P. M. Wilson		78	75	1	....	....	2	7	9	19
Northfield	T. J. McPhee		55	52	1	....	4	1	8	6	20
North Saanich	S. E. M. Hoops		98	95	3	8	2	....	....	....	1
Norwegian Creek	A. Francis		13	13	....	....	....	....	....	....	6
Notch Hill	W. Scatchard		23	22	....	....	1	....	....	4	4
Ocean Falls	A. E. H. Bennett		156	148	13	....	14	3	....	8	22
Okanagan	W. J. Knox		42	38	1	....	4	....	3	3	4
Okanagan Centre	"		10	10	1	....	1	....	....	....	....

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
20	1	3		....	....	....	....		Good	Yes.
3	...	...		....	....	....	....		O.K.	"
3	1	1		....	....	....	....		Good	Two; clean.
4	....	1		....	....	....	....	Rubella	"	Clean; adequate.
....	....	1	Cleft palate, 1; varicocele	....	....	....	....		Excellent	"
10	....	1		....	....	....	....		Not crowded; well ventilated and heated	"
8	....	....		....	....	....	...		Good	"
5	....	2		....	....	....	....		Satisfactory	"
2	....	....		....	....	....	....		Good	"
10	...	1	Cardiac, 2	....	....	....	....			
8	3	1		....	....	....	4		No	Yes.
...	....	....		....	....	....	....		Good	Good.
2	....	....		....	....	....	....		"	Adequate.
11	....	3	Hip-joint deformity, 1	....	....	2	....		"	Yes.
3	4	1	Orthopædic, 1; anæmia, 2	....	....	....	....	Measles, 1; pertussis, 7	"	"
98	51	89	Chorea, 1	....	8	1	....			
2	37	32	Cardiac, 1	....	....	....	....		O.K.	O.K.
14	...	...	Infantile paralysis, 1	....	....	....	....		Good	Yes.
25	16	1	Skin-disease, 5; wax in ears, 7; nasal catarrh, 1	....	....	1	....	Measles	O.K.	Clean; adequate.
3	....	6		....	....	....	....		No	Yes.
11	2	6	Chorea, 1; eczema, 2; cardiac, 1; anæmia, 2	....	...	....	....	German measles, 5	Excellent	Sanitary; adequate.
4	1	1		....	....	....	....		Adequate	Clean.
....	....	2		....	....	....	....		Good	Adequate.
2	....	....		....	....	....	....		"	Two; clean.
....	....	....		....	....	....	....		Very good	Clean; adequate.
6	....	9		....	....	....	....		Should be condemned	Two; fair.
17	3	5		....	....	1	....	Measles, 5	Good	Yes.
....	....	6		....	....	....	....		"	Good.
8	....	7	Murmur, 1	....	....	....	....		"	Clean.
14	....	13		....	....	....	....		"	"
6	....	2		....	....	....	....		Log building in good condition; lighting and ventilation fair	Clean; adequate.
1	1	2		....	....	....	....		O.K.	O.K.
...	....	3		....	....	....	....		Good	Good.
3	....	....		....	....	....	....		"	Yes.
29	4	1		....	11	....	....	Chicken-pox, 18	"	Two; good.
2	....	....		....	....	....	....		Old and worn	New ones needed.
5	....	2		....	....	....	....		Good	Good.
4	4	4		....	....	....	....		Satisfactory	Clean.
2	....	1		....	..	....	....	Whooping-cough	Good	Good.
16	2	36	Chorea, 11; cardiac, 6	....	....	....	....	Chicken-pox, 3	"	Fair.
18	6	8	Anæmia, 1	....	....	....	....	Smallpox, measles	"	Yes.
4	1	....		....	....	....	....		Very good	Clean; adequate.
33	9	10	Anæmia, 3; eczema, 4; chorea, 2	....	....	...	...	Chicken-pox, 7	No	Yes.
....	....	....	Tabes mesenterica, 1	....	....	....	....		Fair	"
....	....	3	Hip- joint disease	....	....	....	....	Influenza	Good	Clean; adequate.
7	....	2		....	....	....	....		Satisfactory	"
6	1	2		....	....	....	....	Influenza	Not crowded; ventilation and heating good	Outside toilets in good condition.
78	40	87		...	2	....	2			
4	....	...		....	...	....	....		No	Yes.
3	1	2	Asthmatic, 1	....	....	....	....	Measles	Good	Clean.
6	2	2	Cardiac, 1	2	....	....	1	Measles	"	"
10	....	15		...	....	1	....		"	Clean; adequate.
12	....	5	Badly contracted nasal passage, 1	...	....	....	....	Chicken-pox, 6	Needing many repairs	Not very clean.
14	....	...	Endocarditis, 1	.. .	....	....	....	Acute rheumatism	Good	Clean; adequate.
2	....	1		....	....	....	....		"	Yes.
....	...	3		....	2	....	....		"	Two; clean.
6	..	4		....	....	....	....		"	Good.
34	17	21	Chronic bronchitis, 1; aortic insufficient, 1	...	..	....	...		Crowded	"
16	4	7		2	....	...	....	Smallpox	Good	Yes.
44	...	....		....	....	....	....		Excellent	"
....	11	6		....	....	...	....		O.K.	O.K.
16	....	....		....	....	....	....		Satisfactory	Not clean.
30	1	5	Cardiac, 3; hernia, 1; asthma, 1	....	....	.. .	....	Whooping-cough, 23; chicken-pox, 3	Excellent; well ventilated and heated	Clean; adequate.
6	1	3	Anæmia, 1; pigeon-chest, 1	....	.	....	....		Good	Clean.
3	....	1	Bronchial catarrh, 1	....	....	....	....	Chicken-pox	"	Sanitary; adequate.

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Okanagan Falls	H. McGregor		23	23	1	2	....	....	....	....	3
Okanagan, South	W. J. Knox		54	49	3	2	6	1	4	3	8
Okeover Arm	R. E. Ziegler		10	10	....	....	....	....	....	....	....
Olalla	M. D. McEwen	Miss P. East	21	21	....	1	....	....	....	....	3
Oliver	G. H. Kearney		83	81	2	1	22	1	....	1	17
Olson Lake	A. Henderson		11	11	....	....	....	....	....	....	5
150-Mile House	F. V. Agnew		9	9	....	....	1	....	....	....	2
One Mile Creek	Lee Smith		15	11	....	....	....	....	3	5	11
Orange Valley	W. R. Stone		16	16	....	....	1	....	4	4	7
Osland	R. G. Large		9	9	2	....	2	....	1	1	3
Osoyoos	G. H. Kearney		6	6	....	....	....	....	....	....	....
Otter Point	I. B. Hudson		12	12	....	....	....	....	1	2	5
Outlook	W. Truax		23	22	3	....	....	....	3	2	4
Oyama	H. G. Williams		63	62	....	....	....	....	....	4	10
Oyster Bay	T. A. Briggs		10	7	....	....	1	1	....	1	1
Oyster, North	H. B. Maxwell	Miss Hewertson	34	34	2	....	2	....	1	1	6
Oyster River	T. A. Briggs		11	9	....	....	....	....	....	1	1
Oyster, South	H. B. Maxwell	Miss Hewertson	24	22	1	....	1	....	1	1	6
Pachelqua	J. C. Stuart		10	8	....	....	....	....	....	....	....
Pacific	V. E. R. Ardagh		9	9	....	....	....	....	....	1	....
Palling	J. T. Steele		10	6	....	....	2	....	3	2	2
Park Siding	J. B. Thom		12	12	....	1	1	....	....	....	5
Parksville	L. T. Davis	Miss Jukes	79	78	....	....	7	....	....	....	....
Parsons	Paul Ewert		17	17	....	....	1	....	1	1	1
Pass Creek	H. H. MacKenzie		29	26	....	....	....	1	....	....	2
Passmore	"		17	16	3	....	3	....	....	....	5
Pemberton Meadows	N. J. Paul		18	18	....	....	....	....	2	2	4
Pemberton Range	R. W. Irving		8	8	....	....	....	....	....	1	1
Pender Harbour	A. Henderson		22	22	2	....	2	....	....	....	5
Pender Island	E. M. Sutherland		49	49	....	1	....	....	2	2	8
Pender Island, South	"		12	10	....	....	....	....	....	....	....
Perow	C. H. Hankinson		15	15	....	....	....	2	1	....	6
Perry Siding	H. H. MacKenzie		24	24	8	1	2	....	....	2	15
Pinantan	R. W. Irving		5	....	....	....	....	....	....	....	....
Pine	J. J. Gillis		9	9	....	....	....	....	....	....	....
Popcum	J. C. Elliot		32	32	....	....	1	3	1	2	7
Port Alice	J. A. Street		28	28	....	....	3	1	2	3	8
Port Clements	J. C. Dunn		15	15	....	....	....	....	....	....	3
Porteau	A. M. Menzies		10	10	....	....	....	....	....	....	3
Port Hardy	C. A. Watson		11	9	....	....	1	1	....	1	3
Port Renfrew	W. E. Bavis		13	13	....	....	....	....	....	....	1
Port Simpson	R. G. Large		11	11	1	....	4	2	1	1	3
Pouce Coupe	W. A. Watson		23	23	....	....	1	....	1	3	5
Pouce Coupe, Central	"		17	15	....	....	....	....	....	3	5
Pouce Coupe, East	"		13	12	....	....	1	....	1	2	3
Powell River	A. Henderson		436	432	69	....	8	1	2	7	91
Prairiedale	W. R. Stone		12	12	....	....	....	....	2	2	2
Princeton	Lee Smith		177	172	2	2	4	1	10	20	46
Princeton, East	"		15	15	1	....	....	....	3	3	5
Procter	H. H. MacKenzie	Miss Garrood	52	48	8	....	1	....	1	2	19
Puntledge	G. K. MacNaughton		9	9	1	....	....	1	....	2	3
Qualicum Beach	L. T. Davis	Miss Jukes	63	63	....	....	1	....	....	....	....
Qualicum, Little	"	"	16	16	....	....	....	....	....	....	....
Quatsino	J. A. Street		21	21	....	....	1	....	1	1	10
Queen Charlotte City	G. H. Bleecker		30	30	....	....	1	....	2	2	2
Queen's Bay	D. J. Barclay		8	8	....	....	1	....	....	....	....
Quesnel	G. R. Baker		89	89	....	....	....	....	2	2	8
Quesnel, West	"		7	7	....	....	....	....	....	2	5
Quick	G. C. Paine		19	19	....	....	1	....	....	2	5
Raft River	M. G. Archibald		12	8	....	....	....	....	1	....	2
Red Gap	L. T. Davis	Miss Jukes	19	19	....	....	1	....	....	....	....
Refuge Cove	R. E. Ziegler		8	8	....	....	....	....	....	....	....
Reiswig	H. G. Williams		7	7	....	....	....	....	....	....	4
Renata	J. E. H. Kelso		33	33	....	....	5	....	....	2	2
Rendezvous	R. E. Ziegler		8	8	1	2	2	....	1	....	1
Rhone	A. Francis		18	17	....	....	1	....	....	1	8
Riondel	D. J. Barclay		11	11	....	....	....	....	2	1	3
Roberts Creek, East	F. Inglis		14	11	....	....	....	....	....	....	....
Robins Range	C. J. M. Willoughby		11	8	3	....	1	....	1	2	3
Robson	J. E. H. Kelso		25	21	....	1	1	....	....	1	2
Rock Bay	W. W. Birdsall		12	9	....	....	1	....	....	....	....
Rock Creek	A. Francis		28	27	....	....	3	....	....	....	9
Rock Creek, Upper	"		10	10	....	....	....	....	....	1	5

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
4	2	5	Nervous, 1; acne, 1; anæmia, 2	....	....	....	....	Influenza	Good	Good.
10	4	3	Threatening chorea, 3; bronchial catarrh, 3; diabetes, 1; cardiac, 2; anæmia, 3	....	....	....	....	Chicken-pox, 8	Excellent	Sanitary; adequate.
2	....	....		....	....	....	....		Good	Adequate.
2	....	10		....	....	....	....		Satisfactory	Yes.
15	19	11	Psoriasis, 1; deformed palate, 1; cleft palate, 1	....	....	1	....	Acute rheumatic fever, 1	Good	Clean; adequate.
....	....	2	Pharyngitis, 1	....	....	....	....		"	Good.
3	....	....		....	....	....	....	Measles	"	Yes.
3	....	....		....	....	....	....		Fair	"
8	....	....		....	....	....	....		Good	"
8	1	....		....	....	....	....		"	Clean; adequate.
3	2	2		....	....	....	....			Only one closet.
4	4	1	Round shoulder, 1; nervous, 1	....	....	....	....		Satisfactory	Yes.
4	1	....		....	....	....	....		Good	Fair.
....	....	1		....	....	....	....		"	Two; good.
1	....	....		....	....	....	....		"	Yes.
20	....	3	Psoriasis, 1	....	....	....	....	Smallpox, 6	Efficient	"
2	....	....	Loss of right arm, 1	....	....	....	....		Good	"
12	....	3		....	....	....	....		Efficient	"
2	....	....		....	....	....	....	Measles, 1	Satisfactory	Satisfactory; need new doors.
7	....	1		....	....	....	....		Good ventilation	Yes.
2	....	....		....	....	....	....		Satisfactory	Adequate.
6	....	6		....	....	....	....			
11	....	....		....	....	1	....	Measles, chicken-pox	Very good	Clean; adequate.
3	1	....		....	....	....	....	Whooping-cough	Good	Adequate.
12	1	3	Heart, 2	....	....	....	....		Crowded	Unsanitary.
4	1	4	Heart, 1	....	....	....	....		Good	Clean; adequate.
14	10	1		....	....	....	....	Measles	Fair	Clean.
....	....	....		....	....	....	....		Good	Two; clean.
....	....	1	Itch, 1	....	....	....	....		"	Good.
17	6	1		....	....	....	....		Satisfactory	Satisfactory.
4	....	....		....	....	....	....		"	"
4	3	..	Colds, 2	....	....	....	....		Excellent	Yes.
8	....	3	Heart, 2; nervous, 1	....	....	....	....		Good	Dirty.
...	(Not examined as closed before arrival)			....	....	....	....			
2	....	1		....	....	....	....		Poor	Poor.
20	1	4		....	....	....	....		Improving	Poor building.
10	5	....		....	....	....	....		Fair	Yes.
....	....	....		....	....	....	....		Excellent	Clean; adequate.
5	....	....		....	....	....	....		Satisfactory	"
4	....	....		....	....	....	....	Influenza, 2	Light poor	"
3	....	....		....	....	....	....		Satisfactory	"
8	3	1		....	....	....	....		Good	"
8	....	4		....	....	....	....		Fair	Yes.
4	....	5		....	....	....	....		"	"
1	....	4		....	....	....	....		"	"
5	3	19	Cardiac, 3; orthopædic, 6; anæmic, 2; pneumonia T.B., 1; acne, 1	....	....	1	....	Measles, scarlatina	Good	Good.
8	....	2		....	....	....	....		"	Yes.
55	....	46		....	....	....	....	Chicken-pox, 43	"	"
5	....	2		....	....	....	....		"	"
7	....	13	Heart, 1; enuresis, 1	....	....	....	....	Scarlet fever, 1	"	Clean; adequate.
6	3	....	Nerve-disease, 1; wax in ears, 3; nasal obstruction 1; skin-disease, 1; blepharitis, 2	....	....	....	....		O.K.	"
14	....	2		....	....	....	....	Measles, chicken-pox	Very good	"
5	....	....		....	....	....	....		"	"
6	6	....		....	....	....	....		Good	Yes.
2	....	....		....	....	....	....		"	Fair.
....	....	7		....	....	....	....			
....	....	4		....	....	5	....	Measles	No	Yes.
....	....	....		....	....	....	....		"	"
4	....	2		....	....	....	....		Satisfactory	Clean; adequate.
4	1	3		....	....	....	....		Good	Good.
1	....	....		....	....	....	....		Very good	Clean; adequate.
....	....	....		....	....	....	....		Adequate	Adequate.
....	....	....		....	....	....	....		Good	Good.
3	....	....		....	....	....	....		Fair	Yes.
2	....	....		....	....	....	....		Only fair	Adequate.
2	12	5		....	....	....	....		O.K.	O.K.
2	....	11		....	....	....	....			
7	....	..		....	....	....	....		Good	Yes.
2	2	....		....	....	....	....		"	Clean.
3	....	...	General debility, 1	....	....	....	....		Very good	Yes.
4	....	....		....	....	....	....		Adequate	Clean; adequate.
5	22	13	Cardiac, 2	....	....	....	....		O.K.	O.K.
2	7	1	Cardiac, 1	....	....	....	....		"	"

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Rock Mountain	A. Francis		15	14	....	....	1	....	....	1	6
Rocky Point	I. B. Hudson		10	7	....	....	....	....	1	2	3
Roe Lake	R. H. Mason		9	9	1	....	..	....	....	1	3
Rolla	W. A. Watson		66	62	....	....	4	1	3	8	10
Roosville	H. A. Christie		11	10	1	....	....	....	....	...	4
Rosebery	W. E. Gomm		11	11	....	....	1	....	....	1	4
Rose Hill	C. J. M. Willoughby		15	15	..	....	4	1	...	2	3
Rose Lake	J. T. Steele		8	6	....	....	....	....	3	2	3
Round Lake	G. C. Paine		17	17	....	....	1	...	3	3	4
Round Top	R. W. Irving		8	8	....	....	1	....	2	....	....
Royston	G. K. MacNaughton		31	28	3	...	1	1	4	....	1
Rutland	W. J. Knox		158	145	11	3	11	1	13	12	16
Sahtlam	H. N. Watson	Miss Jeffares	24	19	1	...	2	....	6	6	9
St. Elmo	J. C. Elliot		20	20	....	....	...	5	1	2	6
St. Vincent Bay	A. Henderson		6	6	1	...	....	....	....	....	....
Salmo	J. B. Thom and W. C. Bissett		45	45	....	....	3	3	....	2	27
Salmon Bench	P. D. Van Kleeck		18	16	....	....	....	....	6	10	16
Salmon River	C. Ewert		9	6	....	....	....	....	....	....	1
Salmon Valley	P. D. Van Kleeck		12	11	1	....	2	1	3	4	5
Sand Creek	W. Truax		11	11	...	...	....	....	1	1	2
Sand Creek, Big	H. A. Christie		12	11	....	....	....	....	1	1	2
Sandon	P. H. Paterson		65	65	2	....	6	1	2	6	32
Sandspit	G. H. Bleecker		21	21	....	....	....	....	1	2	2
Sandwick	T. A. Briggs		51	49	....	....	2	3	3	8	20
Saskatoon Creek	W. A. Watson		12	12	....	....	....	....	....	2	4
Saturna Island	E. M. Sutherland		6	6	....	....	....	....	1	1	1
Savona Road	C. J. M. Willoughby		9	7	1	....	....	....	....	....	2
Sayward	C. A. Watson	Mrs. E. M. Walls	8	7	....	....	....	....	3	4	4
Sayward, Upper	"	"	11	11	....	1	2	....	....	3	4
Seaford	R. Ziegler		10	10	....	....	....	....	2	2	2
Sechelt	F. Inglis		36	32	....	....	2	....	....	6	4
Shalalth	J. C. Stuart		10	9	....	1	....	....	1	....	1
Shawnigan Lake	F. T. Stanier	Miss Naden	48	46	....	....	3	....	4	5	9
Shelley	W. Laishley		9	9	1	2	2	....	5	5	6
Sheraton	J. T. Steele		12	12	.	1	....	....	2	3	3
Sheridan Lake	R. H. Mason		8	8	....	....	....	....	....	....	....
Shirley	I. B. Hudson		12	12	...	1	1	2	2	1	2
Shoreacres	H. H. MacKenzie		50	35	7	1	....	....	....	2	9
Shuswap	W. Scatchard		14	13	....	....	1	....	....	....	2
Shuswap Falls	H. G. Williams		9	9	....	....	....	....	....	....	2
Shutty Bench	D. J. Barclay		9	8	....	....	....	....	1	1	3
Sicamous	E. Buckell		20	15	1	....	....	....	....	....	2
Sidney	S. E. M. Hoops		115	111	....	....	2	....	....	1	2
Silver Creek	E. Buckell		22	18	...	....	3	...	1	...	7
Silverton	Wm. E. Gomm		71	71	....	....	11	....	....	...	12
Sinclair Mills	W. Laishley		11	11	....	1	1	....	3	3	6
Sirdar	G. B. Henderson		25	24	1	...	3	....	....	4	5
Sisters Creek	G. R. Baker		13	13	....	....	....	....	....	2	2
Skidegate	G. H. Bleecker		6	6	....	....	....	....	....	....	....
Slocan Junction	H. H. MacKenzie		45	43	....	....	....	....	....	1	16
Slocan Park	"		17	17	1	....	1	....	....	1	3
Smithers	C. H. Hankinson		180	180	5	1	6	9	9	3	57
Soda Creek	F. V. Agnew		16	14	....	....	1	....	....	....	2
Solsqua	J. H. Hamilton		25	25	....	....	....	....	....	2	4
Sooke	I. B. Hudson		66	66	1	3	7	3	3	2	10
Sooke, East	"		12	9	2	....	...	1	2	3	4
Sooke, North	"		15	15	....	....	2	1	1	2	5
Sorenson	W. E. Bavis		12	12	...	....	1	....	1	....	1

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
5	9	4		....	....	....	....		O.K.	O.K.
4	4	....	Anæmia, 2	....	....	....	....	Pertussis, 7	Satisfactory	Yes.
4	1	....		....	....	....	....		Fair log building; adequate	Fairly sanitary.
15	2	14		....	....	....	....		Fair	Yes.
5	....	....		....	....	....	....		Satisfactory	Clean; adequate.
....	....	2	Adenoid tumour, 1	....	....	....	....		Good	"
1	4	2		....	....	....	....		"	"
2	2	3		....	....	....	....		Satisfactory	Adequate.
4	....	....		....	....	....	....		"	Clean; adequate.
....	....	....		....	....	....	....	Scarlet fever	Good	Two; clean.
12	3	1	Splinter in brow, 1; anæmia, 1; wax in ears, 2; nasal catarrh, 1	....	....	....	....	Scarlet fever	Primary class in basement poorly lighted	Clean; adequate.
26	7	15	Chorea, 3; cardiac, 4; curvature of spine, 4; anæmia, 11; eczema of face, 5; pulmonary T.B., 1; orthopædic, 3	....	....	....	....	Scarlet fever 9; chicken-pox, 48	Excellent	"
8	1	....		....	....	....	....		Good	"
14	3	4	Result osteomyelitis leg, 1	....	....	....	....		Fair	Clean; poor building.
....	1	1		....	....	....	....		"	Fair.
10	1	6	Cardiac, 3	....	....	....	....			
4	....	9	Extremely nervous, 1	....	....	....	....		Good	Yes.
3	....	1		....	....	....	....		"	Fair.
5	....	5	Toxic goitre, 1	....	....	....	....		"	Yes.
3	....	....		....	....	....	....		"	Good.
8	....	....		....	....	....	....		Satisfactory	Clean; adequate.
32	1	19	Heart cases, 10	....	....	....	....		New school; well lighted, ventilated, and heated; sanitary drinking-fountains	New; clean; adequate.
3	....	....		....	....	....	....		Fair	Poor.
14	1	2		7	....	....	....		Good	Yes.
2	....	6		....	....	....	....		Fair	"
1	....	....		....	....	....	....		Satisfactory	Satisfactory.
....	3	2	Cardiac, 1; nervous, 1	....	....	....	....		Fair	Clean; adequate.
5	....	3		....	....	....	....		"	"
8	....	....		....	....	....	....		Good	Poor.
2	....	1		....	....	....	....		"	Adequate.
10	....	....		....	....	....	....		"	Yes.
2	1	....		....	....	....	....		Satisfactory	Satisfactory.
21	....	1		....	....	....	....		Good	Yes.
5	5	1		....	....	....	....		Not crowded; ventilation and heating good	Outside toilets in fair condition.
2	1	....		....	....	....	....		Desks small	Adequate.
....	....	....	Nervous, 1; discharging ear, 1; conjunctivitis, 2	....	....	....	....		Adequate	No doors.
5	4	....	Round shoulder, 3; cardiac, 2; otitis, 1	....	....	6	....		Satisfactory	Poor.
13	....	10	Heart, 1	....	....	....	....		Good	Poor.
12	....	3		....	....	....	....		Satisfactory	Not clean.
3	....	....		....	....	....	....		Good	Good.
5	....	8		....	....	....	....			
5	....	1		....	....	....	....	Varicella	Satisfactory	Yes.
60	....	2		....	....	....	....		Excellent	"
2	....	3		....	....	....	....		Satisfactory	"
....	....	13		....	....	....	....		Good	Clean; adequate.
8	1	....		....	....	....	....		Not crowded; ventilation and heating good	Outside toilets in fair condition.
1	....	....		....	....	....	....		Good	Clean; adequate.
1	....	4		....	....	....	....		No	Yes.
1	....	....		....	....	....	....		Fair	Poor.
12	....	4		....	....	....	....		Good	Dirty.
7	1	5		....	....	....	....		"	Clean; adequate.
61	49	3	Pneumonia, 1; fractured tibia, 1; herpes, 1; colds, 2; heart, 1	....	....	....	....		"	Yes.
3	....	....		....	....	....	....		"	"
....	....	....		....	....	....	....		Badly overcrowded; poorly ventilated	Bad.
8	8	1	Round shoulder, 5; cardiac, 2; asthma, 2; nervous, 1; anæmia, 4	....	9	....	....		Excellent	Yes.
5	4	....	Round shoulder, 4; anæmia, 1	....	....	3	....		Unsatisfactory	Fair.
6	6	....	Anæmia, 2	....	....	....	....	Scarlet fever, 4	Too small	"
3	....	....		....	....	....	....		Good	Clean; adequate.

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Sorrento	W. Scatchard		24	18	....	....	....	....	....	1	1
South Bank	D. B. Lazier		11	11	....	....	....	....	....	....	3
South View	A. Henderson		10	10	2	....	....	....	....	....	....
Spencer	W. Truax		26	26	3	....	....	....	3	2	2
Spences Bridge	J. J. Gillis		15	11	1	1	1	....	2	3	3
Spillimacheen	Paul Ewert		11	11	....	....	1	....	2	2	3
Springbend	H. W. Keith		17	14	....	....	2	....	1	1	2
Springhouse	F. V. Agnew		13	12	....	....	1	....	....	....	2
Sproat Lake	J. H. Hamilton		6	6	....	....	....	....	....	....	....
Squam Bay	R. W. Irving		22	22	....	....	2	....	3	4	5
Squamish	N. J. Paul		114	114	1	1	5	....	4	4	15
Squilax	W. Scatchard		9	9	....	....	1	....	....	1	1
Squirrel Cove	R. E. Ziegler		15	15	....	....	2	....	3	3	3
Stewart	H. A. Whillans		35	31	....	....	2	....	7	7	14
Stillwater	A. Henderson		20	20	2	....	....	....	....	....	5
Stone Creek	C. Ewert		6	5	....	....	1	....	....	....	....
Streatham	D. B. Lazier		9	9	....	....	1	....	1	2	2
Stuart	W. R. Stone		10	10	....	....	....	....	3	3	4
Stuart Station	"		8	8	....	....	....	....	2	2	2
Stubbs Island	D. S. Dixson		16	16	....	....	....	....	....	....	1
Sugar Lake	H. G. Williams		8	8	....	....	....	....	....	....	1
Sullivan Hill	D. P. Hanington		14	13	....	....	2	1	3	3	3
Sullivan Valley	R. W. Irving		15	15	....	1	2	....	....	4	4
Sunnyside No. 2	C. R. Symmes		20	14	....	....	2	....	2	2	2
Sunnyside	H. G. Williams		8	8	....	....	....	....	....	....	1
Swan Lake, North	W. A. Watson		6	6	....	....	....	....	....	1	2
Swift Creek	T. O'Hagan		17	17	....	....	2	....	3	....	4
Sylvania	F. T. Stanier	Miss Naden	27	24	....	....	3	....	1	1	2
Tabor Creek	C. Ewert		13	11	1	....	1	....	1	1	2
Tappen Siding	E. Buckell		16	14	....	....	1	....	3	3	1
Tappen Valley	"		7	7	....	....	....	....	....	....	....
Tatla Lake	G. H. Charter		9	9	....	....	3	....	....	....	1
Tatalrose	D. B. Lazier		16	16	....	....	....	....	1	4	5
Taylor Flats	W. A. Watson		12	12	....	....	....	....	1	2	4
Tchesinkut Lake	J. T. Steele		7	7	....	....	....	....	3	2	3
Telkwa	G. C. Paine		53	53	....	....	3	....	2	7	9
Testalinda	G. H. Kearney		19	19	2	....	1	....	....	....	1
Three Forks	P. H. Paterson		12	12	....	....	2	1	2	5	10
Three Valley	J. H. Hamilton		8	7	....	....	1	....	....	1	2
Thrums	H. H. MacKenzie		49	42	1	....	3	....	....	3	5
Thurlow	C. A. Watson		9	8	1	....	1	....	....	....	2
Tintagel	J. T. Steele		7	7	....	....	2	....	....	....	....
Topley	C. H. Hankinson		18	8	....	....	....	....	....	....	....
Tranquille	R. W. Irving		15	15	....	....	....	....	....	2	2
Tranquille, Upper	M. G. Archibald		8	8	....	....	....	....	....	....	2
Trapp Lake	C. J. M. Willoughby		15	15	4	....	....	....	....	1	5
Trinity Creek	H. W. Keith		14	12	....	....	....	....	....	2	2
Tulameen	E. Sheffield		10	10	....	....	....	....	4	8	9
Turtle Valley	W. Scatchard		14	12	....	....	1	....	....	....	1
Ucluelet	Guy Palmer		19	19	....	....	1	1	2	2	2
Ucluelet, East	"		16	16	....	....	2	....	5	5	5
Uncha Valley	D. B. Lazier		11	11	....	....	....	....	....	2	2
Union Bay	G. K. MacNaughton		74	72	13	2	1	1	4	3	14
Usk	W. N. Turpel		24	21	1	....	2	1	3	4	6
Valdes Island	R. E. Ziegler		12	12	....	....	....	....	1	1	1
Vananda	Kingsley Terry		33	33	7	....	9	1	2	2	18
Vanderhoof	W. R. Stone		86	86	3	....	7	....	17	17	21
Vavenby	M. G. Archibald		13	10	1	....	1	....	1	4	3
Vesuvius	E. M. Sutherland		28	28	....	....	....	....	1	....	5
Vesuvius, North	"		12	12	....	....	....	....	1	....	3
Vinsulla	C. J. M. Willoughby		8	8	3	....	....	....	1	1	3
Waldo	H. A Christie		52	38	....	....	....	....	2	1	8
Walhachin	R. Gibson		32	32	6	....	2	2	....	4	6

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
5	....	3		....	....	....	....		Satisfactory	Satisfactory.
....	....	....		....	....	....	....		Good	Clean.
....	....	....		....	....	....	....		"	Adequate.
5	2	2		....	....	....	....		"	Good.
5	2	4		....	....	....	....	Measles	"	"
2	....	....		....	....	....	....	Whooping-cough	"	Adequate.
5	....	....		....	....	....	....		"	Yes.
1	2	....		....	....	....	....		"	Needs new pits.
....	....	....		....	....	....	....		"	Good.
2	....	1		....	....	....	....		"	Two ; clean.
35	3	4		....	....	....	....		"	Clean; adequate.
5	....	1		....	....	....	....		Lighting and ventilation poor	Fairly clean.
1	....	3		....	....	....	....		Fair	Adequate.
2	11	2		....	....	....	....		Good	Clean, adequate.
1	1	....		....	....	....	....		"	Good.
5	....	1		....	....	....	....		Fair condition	Fair.
....	....	3		....	....	....	....		Good	Clean.
7	....	....		....	....	....	....		"	Yes.
5	....	....		....	....	....	....		"	"
3	....	....		....	....	....	....	Influenza	Well-filled ; adequately ventilated and heated	Clean ; adequate.
....	....	....		....	....	....	....		Good	Good.
3	....	1		....	....	....	....		Crowded	Need cleaning.
2	....	....		....	....	....	....		Bad in all respects	Two ; clean.
3	....	2		....	....	....	....		Fair	Dry earth ; adequate.
....	....	....		....	....	....	....		Good	Two ; good.
1	....	2		....	....	....	....		Fair	Yes.
4	....	....		....	....	....	....		School overcrowded	Clean.
13	....	....		....	2	....	....	Scarlet fever, 2	Good	Yes.
4	....	1		....	....	....	....		"	Fair.
4	....	2		....	....	....	....		Satisfactory	Yes.
1	....	1		....	....	....	....		"	"
....	....	....		....	....	....	....		Good	Clean ; adequate.
....	....	3	Enlarged heart, 1	....	....	....	....		"	Clean.
5	....	6		....	....	....	....		Fair	Yes.
2	....	3	Infantile paralysis, 1	....	....	....	....		Satisfactory	Adequate.
21	1	5		....	....	....	....		"	Clean ; adequate.
2	4	6		....	....	....	....		New and good	"
12	....	6	Disordered nervous heart, 2	....	....	....	....		School-room large ; well lighted ; heated by a stove in room	"
....	....	....		....	....	....	....		Good	Good.
14	2	14		....	....	....	....		"	Clean ; adequate.
7	....	2	Endocarditis, 1	....	....	....	....		Light poor	"
3	1	2		....	....	....	....		Desks small	Adequate.
....	....	....		....	....	....	....		Good	Yes.
....	....	....		....	....	....	....		"	Two ; clean.
1	4	2	Fallen arch, 1 ; spinal curvature, 1	....	....	....	....		"	Clean.
6	4	3	Conjunctivitis, 1	....	....	....	....		"	Clean ; adequate.
4	....	1	Ringworm, 1	....	....	....	1		"	Fair.
7	....	2		....	....	....	....		Fair	Clean.
4	....	....		....	....	....	....		Satisfactory	Need repairs.
2	....	....		....	....	....	....		Neither	Yes.
3	....	1		....	....	....	....		"	"
2	....	1		....	....	....	....		Good	Clean.
40	17	2	Nasal obstruction, 1 ; cardiac, 1 ; wax in ears, 11 ; anæmia, 5 ; nasal catarrh, 2 ; skin-disease, 2					Scarlet fever, measles, chicken-pox	O.K.	Clean ; adequate.
12	11	4	Pigeon-chest ; T.B. peritonitis	....	....	....	....		Good	"
3	....	....		....	....	....	....		Adequate	Adequate.
22	24	5	Nervous, 2 ; flat feet, 1 ; cardiac, 1 ; scoliosis, 1	....	....	....	1	Influenza, 5 ; tonsillitis, 7	Building O.K.	O.K.
35	....	2	Nervous, 1	....	....	4	....		Good	Yes.
4	4	....		....	....	....	....		Fairly good	Clean ; not in proper position
14	2	....		....	....	....	....		Satisfactory	Adequate.
8	....	....	Flat chest, 1 ; cardiac, 1	....	....	....	....		"	"
4	4	3	Defective palate, 1	....	....	....	....		Good	Clean ; adequate.
14	....	4		....	....	....	....		Satisfactory	"
10	8	3		....	....	....	....		Well-lighted ; ventilation good ; capacity fully occupied	"

RURAL AND

Name of School.	Medical Inspector.	School Nurse.	No. of Pupils enrolled.	No. of Pupils examined.	Malnutrition.	Defective Mentality.	Defective Vision.	Defective Hearing.	Defective Nasal Breathing.	Adenoids.	Enlarged Tonsils.
Wardner	H. A. Christie		53	47	....	....	....	....	10	10	18
Waterloo	T. J. McPhee		59	56	....	....	2	...	5	1	3
Webber Lake	W. R. Stone		9	9	...	....	1	....	2	2	3
Webster	G. R. Baker		9	9	...	....	1	...	...	...	...
Wellington	T. J. McPhee		64	57	1	....	2	..	8	8	16
Wellington, South	"		129	128	5	1	3	3	7	4	25
Westbank	W. J. Knox		17	14	2	1	3	....	5	5	6
Westbank Townsite	Wm. Buchanan		34	33	....	....	6	....	....	....	8
Westbridge	A. Francis		11	10	....	....	4	....	....	....	2
Westview	A. Henderson		42	42	9	....	1	....	1	1	12
Westwold	R. W. Irving		22	22	....	....	2	....	....	3	3
Whaletown	R. E. Ziegler		11	11	....	1	....	....	1	1	1
White Lake	E. Buckell		14	13	....	....	....	....	....	....	1
Wildwood	A. Henderson		57	57	12	....	2	....	....	....	20
Williams Lake	F. V. Agnew		58	41	...	....	5	....	2	1	7
Williams Siding	H. H. MacKenzie		34	32	8	1	4	....	1	7	16
Willowford	R. H. Mason		9	9	1	....	....	...	....	1	3
Willow Point	H. H. MacKenzie	Miss Garrood	31	31	4	....	...	...	....	1	12
Willow River	W. Laishley		19	19	1	3	4	....	5	5	9
Willowvale	W. R. Stone		10	10	...	....	1	....	....	....	....
Wilmer	F. E. Coy		24	19	1	....	....	....	....	....	....
Wilson Creek	F. Inglis		11	10	....	....	2	....	....	2	2
Windermere	F. E. Coy		20	12	....	....	....	....	2	2	2
Winfield	W. J. Knox		69	65	8	2	8	1	7	6	9
Winlaw	H. H. MacKenzie		55	52	13	4	3	....	1	4	18
Wistaria	D. B. Lazier		16	16	...	....	....	....	....	5	5
Woodcock	V. E. R. Ardagh		12	12	....	....	....	....	2	....	....
Woodfibre	C. G. G. Maclean		61	60	2	2	5	....	3	3	27
Woodmere	G. C. Paine		17	17	....	....	2	....	1	2	5
Woodpecker	C. Ewert		7	5	....	....	....	....	1	1	2
Wycliffe	F. W. Green		69	67	....	....	3	....	....	....	10
Wynndel	G. B. Henderson		56	56	1	....	5	....	....	4	11
Yahk	"		76	66	2	....	5	....	....	3	8
Yale	P. S. McCaffrey		25	21	1	1	2	3	12	12	12
Ymir	W. C. G. Bissett		18	18	....	....	2	....	....	2	4
Yorston's	G. R. Baker		9	9	....	....	1	....	....	....	...

ASSISTED SCHOOLS—*Continued.*

Defective Teeth.	Enlarged Glands.	Goitre.	Other Conditions, specify (Nervous, Pulmonary, Cardiac Disease, etc.).	Vermin.	Scabies.	Impetigo.	Ringworm.	Acute Fevers which have occurred during the Past Year.	Condition of Building. State if crowded, poorly ventilated, poorly heated, etc.	Closets. State if clean and adequate.
30	....	2	.....	....	....	....	....	.....	Satisfactory	Clean; adequate.
18	13	4	.....	....	....	1	....	.....	Good.....	Yes.
6	....	1	.....	....	....	....	....	.....	"	"
...	...	...	.....	....	....	....	....	.....	"	"
16	8	2	.....	....	2	....	....	Smallpox, measles	"	"
23	14	20	Talipes, 1.....	1	4	....	1	Smallpox, measles, scarlet fever, mumps	"	"
6	2	2	Toxic goitre, 1; anæmia, 1; bronchial catarrh,	....	....	....	....	Smallpox.....	"	Clean; adequate.
7	....	24	.....	....	....	....	....	.....	Satisfactory	"
1	8	4	Cardiac, 1.....	....	....	....	....	.....	O.K.....	O.K.
....	....	4	Cardiac, 1; nervous, 1.....	....	....	....	....	.....	Good.....	Poor.
....	....	1	.....	....	....	....	....	.....	"	Two; clean.
3	....	....	.....	....	....	....	....	.....	Adequate	Adequate.
8	....	2	.....	....	....	....	....	.....	Satisfactory	Yes.
....	....	4	Epileptic, 1; eczema, 1.....	....	....	....	....	Scarlet fever.....	Good.....	Good.
3	....	....	Epilepsy, 1.	....	....	....	....	Influenza, chicken-pox, measles	Crowded	Yes.
10	2	14	Heart, 1.....	....	....	3	....	.....	Good.....	Clean; adequate.
4	1	....	Nervous, 1.....	....	....	....	....	.....	Temporary quarters in a house	Fair.
8	....	3	Chorea, 1.....	....	....	....	....	.....	Good.....	Clean; adequate.
9	5	....	.....	....	....	....	....	Influenza.....	Not crowded; ventilation and heating good	Outside toilets in good condition.
6	....	....	.....	....	....	....	....	.....	Good.....	Yes.
9	....	....	.....	....	....	....	....	Measles, 13; whooping-cough, 4	.....	Clean; adequate.
5	....	....	.....	....	....	....	....	.....	Good.....	Yes.
6	....	1	.....	....	....	....	....	Measles, 5.....	.....	Clean; adequate.
13	3	4	Bad cleft palate, 1; curvature of spine, 3; orthopædic leg, 1; cardiac, 3; eczema, 3; anæmia, 4	....	....	....	....	German measles, 5.....	Excellent	"
26	1	27	Heart cases, 2.....	...	....	....	....	.....	Good.....	"
....	....	2	.....	...	....	....	....	.....	"	"
6	....	2	.....	....	....	....	....	.....	Thoroughly satisfactory	One; clean.
12	4	....	.....	....	....	2	....	Measles, 6	First class in every respect	Clean; adequate.
7	....	5	.....	....	....	....	....	.....	Satisfactory.....	"
2	....	1	.....	....	....	....	....	.....	Good.....	"
4	....	....	Cardiac, 1; agriasis, 1	....	....	....	....	.....	"	Clean.
14	....	....	.....	....	....	....	....	.....	"	Clean; adequate.
7	....	....	.....	....	....	....	....	.....	"	"
1	....	4	.....	....	....	....	....	.....	.....	.....
6	....	3	.....	....	....	....	....	.....	No	Yes.
....	....	....	.....	....	....	....	....	.....	.....	.....

REGISTRAR'S REPORT UNDER THE VITAL STATISTICS ACT.

OFFICE OF REGISTRAR, BIRTHS, DEATHS, AND MARRIAGES,
VICTORIA, B.C., November 26th, 1927.

H. E. Young, Esq., M.D., C.M., LL.D.,
Secretary, Provincial Board of Health, Victoria, B.C.

SIR,—I have the honour to submit the Fifty-fifth Report of Vital Statistics for the year ended December 31st, 1926.

POPULATION.

The census for the year 1921 gave the population of the Province as 524,582. Estimates of the population for subsequent years as given by the Dominion Bureau of Statistics are as follows:—

1922	535,000
1923	544,000
1924	553,000
1925	561,000
1926	568,000

REGISTRATIONS.

The following table shows the total number of registrations, including Indian returns, received in this office for the years 1924, 1925, and 1926:—

Divisions.	Births.			Deaths.			Marriages.		
	1924.	1925.	1926.	1924.	1925.	1926.	1924.	1925.	1926.
Victoria	1,366	1,249	1,135	662	650	731	473	491	510
Nanaimo	869	819	803	300	309	307	185	175	196
Vancouver	4,507	4,734	4,604	2,035	1,992	2,215	1,988	2,173	2,237
New Westminster	1,376	1,509	1,627	617	679	742	434	451	475
Ashcroft	285	277	288	107	111	115	80	60	60
Grand Forks	1,144	1,184	1,045	427	438	522	296	295	342
Alberni	659	645	610	220	232	230	154	153	140
Beaton	1,046	1,187	1,227	455	401	479	335	334	365
Indian Reserves	408	469	486	457	436	383	120	106	127
Totals	11,660	12,073	11,825	5,280	5,248	5,724	4,065	4,238	4,452

BIRTHS.

The total number of living births in the Province, including Indians, for the year 1926 was 10,063, as against 10,342 for the year 1925, giving a rate of 17.7 per 1,000 population, as against 18.4 in the year 1925.

That all the births that occur in the Province are not registered as required by the "Vital Statistics Act" is evident from the very large number of delayed registrations which continue to be submitted to the Department from year to year.

The following table gives an analysis of births for the past five years:—

Year and Sex.	Total Births.		Single.		Twin.			Triplet.			Legitimate.	Illegitimate.
	Born alive.	Still-born.	Born alive.	Still-born.	No.	Born alive.	Still-born.	No.	Born alive.	Still-born.		
1922.												
Male	5,293	.....	5,184	.....	109	108	....	1	1	....	5,235	58
Female	4,873	.....	4,761	.....	.....	110	....	....	2	....	4,800	73
Totals	10,166	272	9,945	.....	.....	218	....	....	3	....	10,035	131
1923.												
Male	5,176	.....	5,056	.....	135	120	15	....	....	....	5,125	51
Female	4,825	.....	4,698	.....	.....	127	8	....	....	....	4,752	73
Totals	10,001	299	9,754	.....	.....	247	23	....	....	....	9,877	124
1924.												
Male	5,203	.....	5,119	146	98	83	6	1	....	....	5,121	82
Female	4,916	.....	4,814	120	.....	103	4	....	....	3	4,828	88
Totals	10,119	279	9,933	266	.....	186	10	....	....	3	9,949	170
1925.												
Male	5,329	.....	5,241	143	111	95	10	....	....	....	5,214	115
Female	5 013	.....	4,921	111	.....	101	16	....	....	....	4,921	92
Totals	10,342	280	10,162	254	.....	196	26	....	....	....	10,135	207
1926.												
Male	5,168	.....	5,043	153	.....	124	18	....	1	....	5,062	106
Female	4,895	311	4,776	125	137	117	15	1	2	....	4,807	88
Totals	10,063	.....	9,819	278	.....	241	33	....	3	....	9,869	194

NATURAL INCREASE.

The natural increase for the past five years is shown in the following table:—

Year.	Male.			Female.			Both Sexes.	Population (estimated).	Rate of Natural Increase per 1,000 Population.
	Births.	Deaths.	Excess of Births over Deaths.	Births.	Deaths.	Excess of Births over Deaths.	Excess of Births over Deaths.		
1922	5,293	3,052	2,241	4,873	1,855	3,018	5,259	539,000	9.8
1923	5,176	3,070	2,106	4,825	1,927	2,898	5,004	544,000	9.2
1924	5,203	3,080	2,123	4,916	1,924	2,992	5,115	553,000	9.2
1925	5,329	3,047	2,282	5,013	1,898	3,115	5,397	561,000	9.6
1926	5,168	3,332	1,836	4,895	2,142	2,753	4,589	568,000	8.0

DEATHS.

The total number of deaths in the Province for the year 1926 was 5,474, and of these 3,332 were males and 2,142 females. The rate per 1,000 population was 9.6, as against 8.8 in the year 1925. An analysis of the deaths shows that 2,172 of the decedents were single, 2,411 were married, 875 were widowed, and in 16 instances the condition was not given. The nativity of the decedents was as follows: Canadian, 2,598; British, 1,760; United States, 341; other foreign, 717; and 58 not stated. The racial origin of 1,994 decedents is given as English, 588 as Irish, 1,147 as Scotch, 59 as Welsh, 416 as Indian, 224 as Chinese, and 161 as Japanese.

The causes of death by sex in cities of 1,000 population and over during the year 1926 is given at the end of this report.

INFANT MORTALITY.

The total number of deaths of children under 1 year of age for the year 1926 was 588, as against 569 for the year 1925, giving a rate per 1,000 living births of 58.4 for the year 1926, as against 55 for the previous year. The principal causes of death among children under 1 year of age is shown below:—

Cause of Death.	1922.	1923.	1924.	1925.	1926.
Premature	154	190	158	158	183
Congenital debility	88	52	40	49	37
Malformations	54	62	52	50	83
Diarrhœa	75	36	38	39	26
Bronchopneumonia	50	51	17	37	36
Injury at birth	39	38	28	32	20
Pneumonia	35	26	34	20	32
Whooping-cough	11	23	19	27	23
Influenza	29	13	12	10	15
Convulsions	17	10	7	14	8
Tuberculosis	11	8	13	12	11
Other causes	129	109	156	121	114
Totals	692	668	574	569	588
Living births	10,166	10,001	10,119	10,342	10,063
Rate per 1,000 living births	68.1	66.8	56.7	55.0	58.4

MATERNAL MORTALITY.

	1922.	1923.	1924.	1925.	1926.
Accidents of pregnancy:					
(*a.*) Abortion	13	4	6	2	....
(*b.*) Ectopic gestation	....	3	1	....	2
(*c.*) Other accidents of pregnancy	5	1	4	....	2
Puerperal hæmorrhage	6	9	11	6	9
Other accidents of childbirth:					
(*a.*) Caesarean section	....	3	....	2	5
(*b.*) Other surgical and instrumental delivery	....	1	1	5	2
(*c.*) Others under this title	5	2	2	6	....
Puerperal septicæmia	13	14	21	19	15
Phlegmasia alba dolens, embolism, sudden death	4	7	3	10	7
Puerperal albuminuria and convulsions	14	13	15	3	19
Following childbirth (not otherwise defined)	3	6	5	6	3
Puerperal diseases of the breast	....	....	....	1	1
Totals	63	63	69	60	65
Rate per 1,000 living births	6.2	6.3	6.8	5.9	6.4

TUBERCULOSIS.

According to the census of 1921, 20.1 per cent. of the total Indian, 59.5 per cent. of the total Chinese, and 94.5 per cent. of the total Japanese population of the whole Dominion were located in the Province of British Columbia. An analysis of the returns of deaths from tuberculosis shows that in the year 1926 these three races alone accounted for 232 deaths out of 532, or 44.6 per cent. of all deaths from tuberculosis in the Province. That the high rate of deaths from tuberculosis among these three races has a marked effect on the rate for the whole Province is evidenced by the following:—

	Deaths, T.B.	Rate per 1,000 Population.
Japanese, Chinese, Indians	232	3.70
Other races	300	0.59
Province, all races	532	0.91

British Columbia, all Races included.

Year.	Deaths from Tuberculosis.	Deaths, all Causes.	T.B. Rate per Cent., all Deaths.	Population.	T.B. Rate per 1,000 Population.
1921	512	4,572	11.19	524,582	0.97
1922	507	4,907	10.33	539,000	0.94
1923	525	4,997	10.50	544,000	0.96
1924	527	5,004	10.53	553,000	0.95
1925	538	4,945	10.87	561,000	0.95
1926	532	5,474	9.72	568,000	0.93

Chinese, British Columbia.

Year.	Deaths from Tuberculosis.	Deaths, all Causes.	T.B. Rate per Cent., all Deaths.	Population.	T.B. Rate per 1,000 Population.
1921	49	220	22.26	23,533	2.08
1922	64	232	27.58	23,533	2.72
1923	44	228	19.29	23,533	1.87
1924	40	211	18.95	23,533	1.70
1925	44	195	22.56	23,533	1.87
1926	59	224	26.34	23,533	2.55

British Columbia Indians.

Year.	Deaths from Tuberculosis.	Deaths, all Causes.	T.B. Rate per Cent., all Deaths.	Population.	T.B. Rate per 1,000 Population.
1921	104	364	28.57	25,694	4.05
1922	99	370	26.76	24,744	4.00
1923	133	432	30.79	25,694	5.18
1924	125	457	27.35	25,694	4.86
1925	155	436	35.55	24,316	6.37
1926	145	416	34.85	24,316	5.96

Japanese, British Columbia.

Year.	Deaths from Tuberculosis.	Deaths, all Causes.	T.B. Rate per Cent., all Deaths.	Population.	T.B. Rate per 1,000 Population.
1921	33	142	23.24	15,006	2.19
1922	22	190	11.58	15,806	1.38
1923	24	158	15.19	16,004	1.49
1924	23	150	15.33	17,418	1.32
1925	33	195	16.92	18,226	1.81
1926	28	161	17.39	19,048	1.47

Races other than Chinese, Japanese, and British Columbia Indians.

Year.	Deaths from Tuberculosis.	Deaths, all Causes.	T.B. Rate per Cent., all Deaths.	Population.	T.B. Rate per 1,000 Population.
1921	326	3,846	8.47	460,349	0.70
1922	322	4,115	7.82	474,917	0.67
1923	324	4,179	7.75	478,769	0.67
1924	339	4,186	8.09	486,355	0.69
1925	306	4,119	7.42	494,925	0.61
1926	300	4,673	6.42	501,103	0.59

CAUSES OF DEATH, 1922–26.

Cause of Death.	1922.	1923.	1924.	1925.	1926.
Respiratory system	417	426	439	443	431
Meninges—central nervous system	28	35	42	41	44
Intestines and peritoneum	24	28	17	14	17
Vertebral column	8	6	10	10	11
Joints	6	1	4	7	2
Other organs	11	16	6	8	14
Disseminated	13	13	9	15	13
Totals	507	525	527	538	532
Rate per cent., all deaths	10.3	10.5	10.5	10.8	9.72
Rate per 1,000 population	0.94	0.96	0.95	0.95	0.93

CANCER.

There has been a considerable increase in the number of deaths from cancer during the year 1926, as is shown in the following table:—

Cause of Death.	1922.	1923.	1924.	1925.	1926.
Buccal cavity	16	14	18	19	22
Stomach and liver	178	180	177	181	202
Peritoneum, intestines, rectum	70	70	73	73	90
Female genital organs	45	48	53	36	55
Breast	39	33	41	63	44
Skin	8	11	8	7	6
Unspecified	89	97	87	94	107
Totals	445	453	457	473	526
Rate per 1,000 population	0.82	0.83	0.82	0.84	0.92

AGES OF DECEDENTS.

The following is a comparative statement of the ages of decedents for the years 1922 to 1926. The increases in the age periods from 40 years and upwards are very noticeable.

Year and Sex.	Under 1 Year.	1 Year.	2 Years.	3 Years.	4 Years.	5 to 9 Years.	10 to 19 Years.	20 to 29 Years.	30 to 39 Years.	40 to 49 Years.	50 to 59 Years.	60 to 69 Years.	70 to 79 Years.	80 to 89 Years.	90 to 99 Years.	100 Years and up.	Age not stated.	Total.
1922.																		
Male	415	53	26	25	15	67	145	198	303	402	447	469	318	152*	....	....	17	3,052
Female	277	46	26	31	11	47	88	129	184	196	201	235	247	130	....	....	7	1,855
1923.																		
Male	374	58	39	17	17	71	143	193	302	396	446	482	347	145	26	2	14	3,070
Female	294	52	29	19	11	65	102	123	180	203	210	250	245	120	17	....	5	1,927
1924.																		
Male	325	58	36	31	25	72	142	176	299	445	443	458	355	169	25	1	20	3,080
Female	249	46	25	19	21	65	106	145	180	233	201	254	223	139	17	....	1	1,924
1925.																		
Male	318	68	34	19	23	68	123	209	254	379	448	506	363	174	27	....	34	3,047
Female	251	42	28	20	16	49	88	151	160	190	220	277	259	119	22	4	2	1,898
1926.																		
Male	336	52	20	21	28	63	127	181	259	470	484	550	509	181	31	4	16	3,332
Female	252	54	30	21	19	56	111	165	193	242	236	307	273	151	28	2	2	2,142

* Year 1922, 80 years and upwards.

CLASSIFIED DEATHS.

The following is a list of classified deaths in British Columbia for the past five years:—

Cause of Death.	1922.	1923.	1924.	1925.	1926.
General diseases	1,577	1,597	1,654	1,538	1,701
Nervous system	319	332	358	317	405
Circulatory system	715	824	807	864	995
Respiratory system	551	370	335	353	441
Digestive system	365	307	340	354	326
Non-venereal—genito-urinary system	221	280	302	335	367
The puerperal state	63	63	69	60	65
Diseases of the skin and cellular tissue	22	24	24	26	23
Diseases of the bones and organs of locomotion	5	9	9	6	21
Malformations	55	69	60	56	58
Diseases of early infancy	321	320	252	260	297
Old age	105	103	77	88	83
External causes	512	636	614	595	639
Ill-defined	76	63	103	93	53
Totals	4,907	4,997	5,004	4,945	5,474
Rate per 1,000 population	9.1	9.2	9.0	8.8	9.6

SPECIFIED DISEASES.

Deaths from certain specified diseases are given below for the years 1922 to 1926:—

Cause of Death.	1922.	1923.	1924.	1925.	1926.
Typhoid fever	14	12	15	13	15
Smallpox	.....	11	6	3	3
Measles	2	24	90	4	10
Scarlet fever	14	23	19	3	5
Whooping-cough	21	32	31	32	38
Diphtheria	23	26	55	28	33
Influenza	241	136	109	117	197
Tuberculosis	507	525	527	538	532
Cancer	445	453	457	473	526
Bronchitis	44	33	16	26	31
Bronchopneumonia	157	116	68	87	115
Pneumonia	284	173	185	179	226
Diarrhœa and enteritis	114	77	71	104	58
The puerperal state	63	63	69	60	65
Congenital malformations	92	109	96	56	94
Early infancy	321	320	252	260	297
Senility	105	103	77	88	83
Suicides	60	93	78	89	101
Automobile accidents	39	42	56	45	60
Drowning, accidental	105	118	108	117	104
Mines, accidents	36	55	21	15	21
Homicides	16	12	22	14	20

MARRIAGES.

There were 4,418 marriages in British Columbia during the year 1926, as against 4,223 in 1925, 4,038 in 1924, 3,943 in 1923, and 3,763 in 1922.

ORIENTAL RACES.

Chinese.—The total number of Chinese births registered during the year ended December 31st, 1926, was 203, as against 234 in the year 1925. Chinese children born and registered in the same period numbered 163, the balance being registrations of children born prior to 1926.

The number of Chinese deaths registered during the year ended December 31st, 1926, was 224, as against 195 during the preceding year. Deaths from tuberculosis and cancer numbered 59 and 15 respectively.

Deaths of children under 1 year of age, 16; still-births, 2.

Japanese.—There were 1,170 registrations of births of Japanese children during the year ended December 31st, 1926, as against 1,104 registrations the previous year. The number of Japanese children born and registered in the same period was 756, as against 687 the previous year.

Japanese deaths registered in the year 1926 numbered 161—deaths from tuberculosis and cancer numbering 28 and 5 respectively. There were 60 deaths of children under 1 year of age and 25 still-births.

INDIAN RETURNS.

The total number of registrations of births of Indians for the year ended December 31st, 1926, was 486, and of these 224 were males and 262 females. Children born during the year numbered 415. The birth rate per 1,000 population was 17.6, as against 17.8 the previous year.

There were 416 Indian deaths during the year, and of these 193 were males and 223 females. Deaths from tuberculosis numbered 145, or 34.85 per cent. of the total number of Indian deaths. Deaths from cancer numbered 8. The deaths of 76 children under 1 year of age were registered during the year.

Marriages registered during the year numbered 127.

"ADOPTION ACT."

Particulars of birth relating to 124 children adopted under "the Adoption Act" were received and filed in this office during the year 1926.

GENERAL REMARKS.

The work of the Department continues to increase, as may be gathered in part from the following figures:—

	1924.	1925.	1926.
Letters inward	6,475	8,198	8,982
Letters outward	5,198	6,630	7,349
Searches	3,945	5,493	5,919
Certificates issued	3,783	5,450	5,708
Certificates, mothers' pensions	312	811	636
Certificates, S.C.R.	446	398	512
Hospital returns checked	295	578	849
Cash receipts	$3,133.81	$4,252.99	$4,539.09
Marriage licences	315.00	455.00	405.00

That this increase in work has been successfully handled is entirely due to the loyal co-operation of my staff and to the unfailing courtesy and assistance rendered by all officials connected with this Department.

I have, etc.,

HERBERT B. FRENCH, M.A.,
Deputy Registrar of Births, Deaths, and Marriages.

CAUSES OF DEATH BY SEX IN CITIES OF 1,000

Classification No.	CAUSE OF DEATH. (After the Bertillon Classification Causes of Death, Third International Decennial Revision, Paris, 1920.)	Chilliwack.	Cranbrook.	Cumberland.	Duncan.	Fernie.	Grand Forks.	Kamloops.	Kelowna.
	I. Epidemic, Endemic, and Infectious Diseases.								
1	Typhoid fever and paratyphoid:								
	(*a.*) Typhoid fever ..... M.	....	1	....	....	....	....	....	....
	" ..... F.	....	....	....	....	1	....	....	3
	(*b.*) Paratyphoid fever ..... F.	....	....	....	....	....	....	....	....
6	Smallpox ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
7	Measles ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
8	Scarlet fever ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
9	Whooping-cough ..... M.	....	....	....	....	....	....	....	1
	" ..... F.	....	....	1	....	....	....	....	....
10	Diphtheria ..... M.	....	1	....	....	1	....	....	....
	" ..... F.	....	....	....	....	1	....	....	....
11	Influenza:								
	(*a.*) Sole cause ..... M.	....	....	1	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	1
	(*b.*) With phthisis ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	1
	(*c.*) With bronchitis ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
	(*d.*) With pneumonia ..... M.	....	....	....	....	1	....	4	2
	" ..... F.	....	....	....	....	....	....	....	....
	(*e.*) With other respiratory diseases ..... M.	....	....	....	....	....	....	....	1
	" ..... F.	....	....	....	....	....	....	....	....
	(*f.*) With pregnancy and parturition ..... F.	....	....	....	....	....	....	....	....
	(*g.*) With other causes ..... M.	....	....	....	1	....	....	1	1
	" ..... F.	2	....	....	....	1	....	....	1
13	Mumps ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
16	Dysentery:								
	(*c.*) Unspecified or other causes ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
21	Erysipelas ..... M.	....	....	....	....	....	....	....	2
	" ..... F.	....	....	....	....	....	....	1	....
22	Acute anterior poliomyelitis ..... M.	....	....	....	....	....	....	....	....
23	Lethargic encephalitis ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
24	Meningococcus meningitis ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
25	Other epidemic and endemic diseases:								
	(*a.*) Chicken-pox ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
29	Tetanus ..... M.	....	....	....	....	....	....	....	....
31	Tuberculosis of respiratory system ..... M.	1	4	1	....	1	2	3	....
	" ..... F.	1	1	....	1	....	1	2	....
32	Tuberculosis of meninges and central nervous system ..... M.	....	....	1	....	1	....	1	....
	" ..... F.	....	....	....	....	....	....	....	....
33	Tuberculosis of intestines and peritoneum ..... M.	....	....	....	....	1	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
34	Tuberculosis of vertebral column ..... M.	....	1	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
35	Tuberculosis of joints ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
36	Tuberculosis of other organs:								
	(*b.*) Bones (No. 34 excepted) ..... M.	....	1	....	....	....	....	....	....
	(*c.*) Lympathic system (No. 33 excepted) ..... M.	....	....	....	....	....	....	....	....
	(*d.*) Genito-urinary system ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....

POPULATION AND OVER, BRITISH COLUMBIA, 1926.

Ladysmith.	Merritt.	Nanaimo.	Nelson.	New Westminster.	North Vancouver.	Point Grey.	Port Alberni.	Port Coquitlam.	Port Moody.	Prince George.	Prince Rupert.	Revelstoke.	Rossland.	South Vancouver.	Trail.	Vancouver.	Vernon.	Victoria.	Balance of Province.	Total Deaths, Province.
....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	1	1	.....	3	8
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	4	.....	.....	3	8
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	1	2
....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	.....	.....	.....	2
....	1	1	1	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	3
2	....	....	....	2	....	....	....	....	....	....	....	....	....	1	....	2	.....	4	1	13
1	....	1	....	....	....	....	....	....	....	....	....	....	....	2	....	7	.....	1	12	25
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	14	.....	.....	2	19
....	....	....	....	1	....	2	....	....	....	....	....	....	....	....	....	8	.....	.....	2	14
....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	.....	.....	.....	7	10
....	....	....	....	....	1	....	....	....	....	....	1	1	....	....	....	3	.....	.....	8	15
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	1	4	7
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	5	8
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	3
....	....	2	1	1	2	1	1	1	....	....	....	....	....	3	....	12	1	7	9	48
....	....	....	....	3	1	1	....	2	....	....	....	....	....	1	....	18	.....	2	5	33
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	2	4
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	.....	.....	.....	2	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	.....	.....	.....	3
....	....	....	....	2	....	4	....	....	....	....	....	....	....	....	....	8	.....	1	7	25
....	....	1	....	....	....	2	....	....	....	....	1	....	....	1	....	15	.....	2	10	36
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	.....	.....	1	8
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	6	.....	1	1	10
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	1	1	3
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	3	.....	.....	.....	5
....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	1	.....	.....	1
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	.....	1
....	1	3	4	5	1	10	....	....	....	....	1	2	....	3	3	75	2	34	108	264
1	....	1	1	8	....	2	....	....	....	....	2	....	1	4	....	29	.....	5	107	167
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	11	.....	4	8	27
....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	6	1	3	6	17
....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	1	.....	1	2	7
....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	4	.....	2	2	10
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	2	5
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	.....	.....	1	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	.....	.....	.....	1	2
....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	2	.....	2	3	9
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	1	2

CAUSES OF DEATH BY SEX IN CITIES OF 1,000

Classification No.	CAUSE OF DEATH. (After the Bertillon Classification Causes of Death, Third International Decennial Revision, Paris, 1920.)	Chilliwack.	Cranbrook.	Cumberland.	Duncan.	Fernie.	Grand Forks.	Kamloops.	Kelowna.
	I. Epidemic, Endemic, and Infectious Diseases—*Continued.*								
37	Disseminated tuberculosis:								
	(*a.*) Acute ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
	(*b.*) Chronic or unstated ..... M.	....	1	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
38	Syphilis ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
41	Purulent infection, septicæmia ..... M.	1	....	....	....	....	....	....	....
	" ..... F.	....	1	....	....	....	....	....	....
	II. General Diseases not included in Class I.								
43	Cancer of buccal cavity ..... M.	....	....	....	....	....	1	....	....
	" ..... F.	....	....	....	....	....	....	....	....
44	Cancer of stomach and liver ..... M.	1	....	1	1	1	....	5	1
	" ..... F.	....	....	....	2	....	....	3	..
45	Cancer of peritoneum, intestines, rectum ..... M.	1	....	....	1	....	....	2	....
	" ..... F.	1	....	....	....	....	....	1	....
46	Cancer of female genital organs ..... F.	....	....	....	....	....	....	....	....
47	Cancer of breast ..... F.	....	....	....	....	....	....	1	1
48	Cancer of skin ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
49	Cancer of organs not specified ..... M.	1	....	....	1	1	....	5	....
	" ..... F.	....	....	....	....	....	1	1	....
50	Benign tumours (not returned as malignant) ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
51	Acute rheumatic fever ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
52	Chronic rheumatism, osteoarthritis, gout ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
54	Pellagra ..... M.	....	....	....	....	....	....	....	....
56	Rickets ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
57	Diabetes mellitus ..... M.	....	1	....	....	....	1	2	1
	" ..... F.	1	1	1	....	....	....	1	....
58	Anæmia, chlorosis:								
	(*a.*) Pernicious anæmia ..... M.	....	....	....	....	....	....	3	....
	" ..... F.	1	....	....	1	....	....	....	....
	(*b.*) Other anæmias and chlorosis ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
60	Diseases of thyroid gland:								
	(*a.*) Exophthalmic goitre ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	1	....	....	1	1	....	....	1
	(*b.*) Other diseases of thyroid gland ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
61	Diseases of parathyroid glands ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
62	Diseases of the thymus ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
63	Diseases of the adrenals (Addison's disease) ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
64	Diseases of the spleen ..... M.	....	....	....	....	....	....	....	....
65	Leukæmia and Hodgkin's disease:								
	(*a.*) Leukæmia ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
	(*b.*) Hodgkin's disease ..... M.	....	....	....	....	1	....	....	....
66	Alcoholism:								
	(*a.*) Delirium tremens ..... F.	....	....	....	....	....	....	....	....
	(*b.*) Acute alcoholism ..... M.	....	....	....	....	....	....	1	....
	" ..... F.	....	....	....	....	....	....	....	....

POPULATION AND OVER, BRITISH COLUMBIA, 1926—*Continued.*

Ladysmith.	Merritt.	Nanaimo.	Nelson.	New Westminster.	North Vancouver.	Point Grey.	Port Alberni.	Port Coquitlam.	Port Moody.	Prince George.	Prince Rupert.	Revelstoke.	Rossland.	South Vancouver.	Trail.	Vancouver.	Vernon.	Victoria.	Balance of Province.	Total Deaths, Province.
....	....	....	....	....	....	2	....	....	....	....	1	....	....	....	....	.....	.....	1	.....	4
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	3	.....	.....	.....	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	3
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	2
....	....	....	....	1	....	....	....	....	....	1	1	....	....	....	....	7	.....	1	4	15
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	.....	.....	.....	3
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	5	.....	.....	3	10
....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	5	.....	.....	1	9
....	....	....	1	1	....	1	....	....	....	....	....	....	....	....	....	8	.....	5	3	20
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	1	2
....	....	4	6	2	....	7	....	....	....	....	3	....	1	5	1	49	.....	20	27	135
....	....	1	4	5	....	4	....	....	....	....	....	1	1	7	1	17	.....	4	17	67
....	....	....	....	3	....	....	....	....	....	1	....	....	1	3	....	21	.....	10	6	49
....	....	....	....	3	....	2	....	....	....	....	....	....	....	2	....	16	.....	8	8	41
1	....	3	1	2	1	1	....	....	....	....	2	1	....	1	....	19	.....	9	14	55
....	....	....	....	1	2	4	....	....	....	....	....	....	....	2	....	12	.....	6	15	44
....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	2	.....	1	.....	5
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	1	4	....	5	....	....	....	....	....	....	....	1	....	27	.....	12	12	70
1	....	1	....	2	....	2	....	....	....	....	....	....	....	5	....	14	.....	4	6	37
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	.....	2	3	8
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	.....	1
....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	.....	.....	.....	2	4
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	4	.....	3	5	13
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	3
....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	2	3
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	1	3
....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	14	.....	4	7	32
....	....	....	....	3	....	1	....	....	....	....	....	1	....	....	....	8	.....	6	4	27
....	....	1	....	4	2	1	....	....	....	....	1	....	....	2	....	8	.....	2	1	25
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	12	.....	2	7	24
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	.....	.....	1	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	1	1	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	.....	.....	.....	3
....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	11	.....	2	3	22
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	.....	.....	.....	.....	1
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	2	.....	1	1	5
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	2
....	....	....	....	....	....	....	....	....	....	1	....	....	....	1	....	7	.....	.....	.....	9
....	....	....	....	1	....	1	....	....	....	....	....	....	....	1	....	2	.....	.....	1	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	3	.....	1	.....	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	1	.....	2
....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	....	.....	.....	.....	1	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	3

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	II. General Diseases not included in Class I.—*Continued.*								
66	Alcoholism—*Continued.*								
	(*c.*) Chronic alcoholism ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
68	Chronic organic poisoning:								
	(*a.*) Chronic morphinism ..... F.	....	....	....	....	....	....	....	....
	(*c.*) Other organic poisoning ..... M.	....	....	....	....	....	....	....	....
69	Other general diseases:								
	(*a.*) Diabetes insipidus ..... F.	....	....	....	....	....	....	....	....
	(*b.*) Hæmophilia ..... M.	....	....	1	....	....	....	....	....
	,, ... F.	....	....	1	....	....	....	....	....
	(*c.*) Purpura hæmorrhagica ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
	(*d.*) Others under this title ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
	III. Diseases of Nervous System and Organs of Special Sense.								
70	Encephalitis ..... M.	....	....	....	....	....	....	1	1
	,, ... F.	....	....	....	....	....	....	....	....
71	Meningitis:								
	(*a.*) Simple meningitis ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
	(*b.*) Non-epidemic cerebrospinal meningitis ..... F.	....	....	....	....	....	....	....	....
72	Tabes dorsalis (locomotor ataxia) ..... M.	....	....	....	....	....	....	1	....
73	Other diseases of the spinal cord ..... M.	....	....	....	1	1	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
74	Cerebral hæmorrhage, apoplexy:								
	(*a.*) Apoplexy ..... M.	....	....	1	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
	(*b.*) Cerebral hæmorrhage ..... M.	1	3	....	....	....	....	....	1
	,, ... F.	....	....	....	1	1	....	1	1
	(*c.*) Cerebral thrombosis and embolism ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
75	Paralysis without specified cause:								
	(*a.*) Hemiplegia ..... M.	....	....	....	....	....	....	2	....
	,, ... F.	....	....	....	....	....	....	....	....
	(*b.*) Others under this title ..... M.	....	....	....	....	....	....	1	....
	,, ... F.	1	....	....	....	....	....	....	....
76	General paralysis of the insane ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
77	Other forms of mental alienation ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
78	Epilepsy ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	1	....	....	....	....	....	....	....
80	Infantile convulsions (under 5 years) ..... M.	1	....	....	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....
81	Chorea ..... F.	....	....	....	....	....	....	....	....
82	Neuralgia and neuritis ..... F.	....	....	....	....	....	....	....	....
83	Softening of the brain ..... F.	....	....	....	....	....	1	....	....
84	Other diseases of the nervous system ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	1	....	....	....	....	....	1	....
85	Diseases of the eye and annexa ..... F.	....	....	....	....	....	....	....	....
86	Diseases of the ear and of the mastoid process:								
	(*a.*) Diseases of the ear ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	....	....	1	1	....	....	....	....
	(*b.*) Diseases of the mastoid process ..... M.	....	....	....	....	....	....	....	....
	,, ... F.	....	....	....	....	....	....	....	....

POPULATION AND OVER, BRITISH COLUMBIA, 1926—*Continued.*

Ladysmith.	Merritt.	Nanaimo.	Nelson.	New Westminster.	North Vancouver.	Point Grey.	Port Alberni.	Port Coquitlam.	Port Moody.	Prince George.	Prince Rupert.	Revelstoke.	Rossland.	South Vancouver.	Trail.	Vancouver.	Vernon.	Victoria.	Balance of Province.	Total Deaths, Province.
....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	....	5	1	.....	5	13
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	1	1	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	.....	.....	1	6
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	.....	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	1	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	1	.....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	1	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	.....	3	6	12
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	2	.....	.....	1	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	2	.....	1	3	9
....	....	....	1	....	....	3	....	1	....	....	....	....	....	2	....	7	.....	5	4	23
....	....	....	1	1	....	2	....	....	....	....	1	....	....	1	....	4	.....	.....	2	12
....	....	....	2	1	1	1	....	....	....	....	....	....	....	....	....	4	1	2	5	18
....	....	1	1	4	....	....	....	1	....	....	....	....	....	1	....	4	.....	2	8	22
....	....	....	....	4	....	3	1	....	....	1	2	....	....	....	....	11	2	8	26	63
1	1	....	1	....	1	2	....	....	....	....	....	....	....	1	....	12	1	10	14	48
....	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	.....	2	2	7
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	2	3
....	....	....	....	2	....	1	....	....	....	....	1	....	....	....	....	3	1	.....	.....	10
....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	.....	.....	1	1	4
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	.....	.....	2	5
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	2	4
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	.....	.....	16	18
....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	25	27
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	.....	.....	2	7	10
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	8	10
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	4	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	4	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	2
....	....	....	1	....	....	1	....	....	....	....	....	....	....	1	1	7	.....	.....	6	17
....	1	....	2	....	....	1	....	....	....	....	1	....	....	1	....	5	.....	4	5	22
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	2
....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	4	1	1	.....	8
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	.....	4
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	4	.....	1	.....	6
....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	3	.....	1	1	7

CAUSES OF DEATH BY SEX IN CITIES OF 1,000

Classification No.	CAUSE OF DEATH. (After the Bertillon Classification Causes of Death, Third International Decennial Revision, Paris, 1920.)		Chilliwack.	Cranbrook.	Cumberland.	Duncan.	Fernie.	Grand Forks.	Kamloops.	Kelowna.
	IV. Diseases of the Circulatory System.									
87	Pericarditis	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
88	Endocarditis and myocarditis:									
	(*a.*) Acute endocarditis	M.	....	....	....	....	1	....	....	....
	"	F.	....	....	....	....	....	....	....	....
	(*b.*) Acute myocarditis	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
89	Angina pectoris	M.	....	....	....	....	....	....	1	1
	"	F.	....	....	....	....	....	....	1	....
90	Other diseases of heart	M.	5	7	1	2	2	3	18	2
	"	F.	1	3	1	1	....	3	5	6
91	Diseases of the arteries:									
	(*a.*) Aneurism	M.	....	....	....	....	....	....	....	....
	"	F.	1	....	....	....	....	....	....	....
	(*b.*) Arteriosclerosis	M.	....	1	1	....	2	1	2	3
	"	F.	....	1	1	....	....	....	....	....
	(*c.*) Other diseases of arteries	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
92	Embolism and thrombosis	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
93	Diseases of the veins	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
94	Diseases of the lymphatic system	F.	....	....	....	....	....	....	....	....
	V. Diseases of the Respiratory System.									
97	Diseases of the nasal fossæ and annexa	M.	....	....	....	....	....	....	....	....
98	Diseases of the larynx:									
	(*c.*) Croup	M.	....	1	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
99	Bronchitis:									
	(*a.*) Acute	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
	(*b.*) Chronic	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
	(*c.*) Not otherwise defined (under 5 years)	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
	(*d.*) Not otherwise defined (over 5 years)	F.	....	....	....	....	....	....	....	....
100	Bronchopneumonia:									
	(*a.*) Bronchopneumonia	M.	1	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
	(*b.*) Capillary bronchitis	M.	....	....	....	....	....	....	....	....
101	Pneumonia:									
	(*a.*) Lobar	M.	1	....	....	2	....	1	2	....
	"	F.	....	....	1	3	....	1	1	....
	(*b.*) Not otherwise defined	M.	....	2	....	....	....	1	1	1
	"	F.	....	1	....	....	....	....	3	....
102	Pleurisy	M.	....	....	....	1	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
103	Congestion and hæmorrhagic infarct of lung	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
105	Asthma	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
106	Pulmonary emphysema	M.	....	....	....	....	....	1	....	1
107	Other respiratory diseases (tuberculosis excepted):									
	(*a.*) Chronic interstitial pneumonia	M.	....	....	....	....	....	....	....	....
	(*c.*) Others under this title	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	1	....	....

POPULATION AND OVER, BRITISH COLUMBIA, 1926—*Continued.*

Ladysmith.	Merritt.	Nanaimo.	Nelson.	New Westminster.	North Vancouver.	Point Grey.	Port Alberni.	Port Coquitlam.	Port Moody.	Prince George.	Prince Rupert.	Revelstoke.	Rossland.	South Vancouver.	Trail.	Vancouver.	Vernon.	Victoria.	Balance of Province.	Total Deaths, Province.
....	1	....	....	1	1	....	....	....	....	....	....	....	....	....	....	1	.....	.....	2	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	2	.....	2	.....	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	1	2
....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	2	5
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	.....	.....	.....	2	3
....	....	....	....	1	....	7	1	....	....	....	....	....	....	2	1	10	2	5	10	41
....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	.....	2	3	11
2	2	9	10	13	6	21	1	1	....	2	4	3	4	10	....	68	3	37	102	338
....	3	2	8	8	7	5	....	....	....	1	1	1	....	15	3	73	.....	38	64	249
....	1	....	2	....	....	3	....	....	....	....	....	....	....	2	....	8	.....	1	4	21
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	1
....	1	4	....	8	3	15	1	1	....	....	....	2	....	6	1	63	1	13	53	182
....	....	1	....	5	....	1	1	....	....	....	....	....	....	6	....	55	1	10	31	113
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	.....	.....	.....	2
....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	.....	.....	.....	3	4
....	....	1	....	....	....	....	....	....	....	....	....	1	....	....	....	1	.....	.....	.....	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	1	2
....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	.....	.....	.....	.....	1
....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	.....	2	2	6
1	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	.....	.....	4	7
....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	3	.....	.....	4	9
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	1	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	2	3
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	.....	.....	1	.....	2
....	1	2	2	1	....	1	....	1	....	....	1	....	....	3	1	31	1	4	17	67
....	1	....	3	3	1	1	1	....	....	....	1	....	....	2	....	18	.....	4	12	47
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	1
....	....	2	3	2	....	4	....	....	....	1	....	....	2	5	2	22	2	6	16	73
....	....	....	....	2	....	....	....	....	....	....	....	....	1	7	1	19	1	3	13	53
....	....	1	4	2	....	2	....	....	....	....	2	1	....	2	1	13	.....	9	16	58
....	1	....	1	2	....	1	....	....	....	....	....	....	....	1	1	9	.....	8	14	42
....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	6	.....	1	2	11
....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	1	.....	1	1	5
....	....	....	....	1	....	1	....	....	....	....	....	1	....	....	1	.....	.....	.....	4	8
....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	3	5
....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	1	1	3	4	11
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	1	1	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	2
....	....	1	1	1	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	2	7
....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	2	.....	2	3	9
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	.....	.....	1	4

CAUSES OF DEATH BY SEX IN CITIES OF 1,000

Classification No.	CAUSE OF DEATH. (After the Bertillon Classification Causes of Death, Third International Decennial Revision, Paris, 1920.)		Chilliwack.	Cranbrook.	Cumberland.	Duncan.	Fernie.	Grand Forks.	Kamloops.	Kelowna.
	VI. Diseases of the Digestive System.									
108	Diseases of the mouth and annexa	M.	....	....	....	....	....	....	2	....
	,,	F.	....	....	....	....	....	....	....	....
109	Diseases of the pharynx and tonsils	M.	....	....	....	....	....	....	....	....
	,,	F.	....	....	....	....	....	....	....	....
111	Ulcer of the stomach:									
	(*a.*) Ulcer of the stomach	M.	....	....	....	1	....	....	1	....
	,,	F.	....	....	....	....	....	....	1	....
	(*b.*) Ulcer of the duodenum	M.	....	....	....	....	....	....	....	....
	,,	F.	....	....	....	....	....	....	....	....
112	Other diseases of the stomach	M.	1	....	....	....	....	....	....	....
	,,	F.	....	....	....	....	....	....	....	....
113	Diarrhœa and enteritis (under 2 years)	M.	....	1	....	....	....	....	2	....
	,,	F.	....	1	....	....	....	....	....	....
114	Diarrhœa and enteritis (2 years and over)	M.	....	....	....	....	....	....	....	....
	,,	F.	....	....	1	....	....	....	....	....
117	Appendicitis and typhilitis	M.	....	....	2	....	....	1	1	1
	,,	F.	....	1	1	....	....	....	1	....
118	Hernia, intestinal obstruction:									
	(*a.*) Hernia, strangulated inguinal (operation)	M.	....	....	....	....	....	....	1	1
	,,	F.	....	....	....	....	....	....	....	....
	(*b.*) Obstruction, intussusception, volvulus	M.	....	....	....	....	....	....	1	....
	,,	F.	1	....	....	....	....	....	....	1
119	Other diseases of the intestines	M.	....	....	....	....	....	....	....	....
	,,	F.	....	....	....	....	....	....	....	....
122	Cirrhosis of the liver:									
	(*b.*) Not specified as alcoholic	M.	....	....	....	....	....	1	....	....
	,,	F.	....	....	....	1	....	....	....	....
123	Biliary calculi	M.	....	....	....	....	....	....	1	....
	,,	F.	....	....	....	....	....	....	....	....
124	Other diseases of the liver	M.	....	....	....	....	....	....	....	....
	,,	F.	....	....	....	....	....	....	....	....
125	Diseases of the pancreas	M.	....	....	....	....	....	....	....	....
	,,	F.	....	....	....	....	....	....	....	....
126	Peritonitis, without specified cause	M.	....	....	....	....	....	....	....	....
	,,	F.	....	....	....	....	....	1	....	....
	VII. Non-venereal Diseases of Genito-urinary System and Annexa.									
128	Acute nephritis	M.	1	2	....	....	....	....	1	1
	,,	F.	....	1	....	....	....	....	....	....
129	Chronic nephritis (Bright's disease)	M.	2	3	1	....	....	1	6	3
	,,	F.	....	....	3	....	....	1	2	1
131	Other diseases of kidneys and annexa	M.	....	....	....	....	....	....	1	....
	,,	F.	....	....	....	....	....	....	....	....
132	Calculi of the urinary passages	M.	....	....	....	....	....	....	....	....
133	Diseases of the bladder	M.	....	....	....	....	....	....	....	....
	,,	F.	....	....	....	....	....	....	....	....
134	Diseases of the urethra, urinary abscess, etc.:									
	(*a.*) Stricture of the urethra	M.	....	....	....	....	....	....	....	....
	(*b.*) Others under this title	F.	....	....	....	....	....	....	....	....
135	Diseases of the prostate	M.	1	....	....	....	....	1	1	1
136	Non-venereal diseases of male genital organs	M.	....	....	....	....	....	....	....	....
137	Cysts and other benign tumours of the ovary	F.	....	....	....	....	....	....	....	....
138	Salpingitis and pelvic abscess	F.	....	....	....	....	....	....	....	....
139	Benign tumours of the uterus	F.	....	....	....	....	....	....	....	....
140	Non-puerperal uterine hæmorrhage	F.	....	....	....	....	....	....	....	....
141	Other diseases of the female genital organs	F.	....	....	....	....	....	....	....	....

POPULATION AND OVER, BRITISH COLUMBIA, 1926—*Continued.*

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....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	3
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	1
....	1	....	....	2	....	....	....	....	....	....	....	....	....	....	....	3	.....	1	1	8
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	.....	1	.....	6
....	1	1	....	1	....	....	....	....	....	....	1	....	....	....	....	8	.....	.....	4	18
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	4	.....	.....	2	8
....	....	....	....	4	1	2	....	....	....	....	....	1	....	1	....	11	.....	.....	3	23
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	3
....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	5	.....	.....	7	14
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	3
....	....	1	1	3	....	....	....	....	....	....	....	1	....	1	1	5	.....	.....	3	19
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	2	5	.....	.....	6	15
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	.....	.....	2	4	7
....	....	....	....	....	1	1	....	....	....	....	....	....	....	1	2	4	.....	2	5	17
....	....	1	2	1	....	....	....	....	....	3	....	1	....	....	....	10	1	4	3	31
1	....	1	....	3	....	....	....	....	....	1	....	....	....	....	....	6	1	2	3	21
....	....	....	....	1	....	1	....	....	....	1	....	....	1	....	....	10	.....	2	2	20
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	1	4	7
....	....	....	....	3	1	....	....	....	....	....	....	....	....	....	1	4	.....	5	3	18
....	....	....	....	1	2	....	....	....	....	....	....	....	....	....	....	5	.....	.....	4	14
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	4
....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	.....	.....	.....	2
....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	4	.....	3	1	11
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	2	.....	1	2	7
....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....	2	.....	.....	1	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	1	2	4
1	....	1	....	1	....	1	....	....	....	....	1	....	....	....	....	4	.....	.....	2	11
....	....	....	....	2	....	1	....	....	....	....	....	....	....	1	....	3	.....	2	3	12
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	1	.....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	3
....	....	....	....	1	....	....	....	....	....	....	....	1	....	....	....	2	.....	.....	2	7
1	....	....	1	1	....	....	....	1	....	....	....	....	....	1	....	6	.....	.....	6	22
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	.....	1	4	8
....	....	5	....	5	4	5	1	1	....	....	1	2	....	7	1	56	1	15	25	145
1	....	5	....	7	....	2	....	....	....	....	....	....	....	5	....	35	1	9	25	97
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	6	.....	1	4	13
....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	4	.....	.....	1	7
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	1	.....	3
....	....	....	....	1	....	2	....	....	....	....	....	....	....	2	....	3	.....	2	3	13
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	1	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	.....	1
....	....	....	3	2	....	2	....	....	....	....	....	....	1	....	....	18	.....	7	3	40
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	2	.....	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	3
....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	2	.....	.....	.....	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	.....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	1	3

CAUSES OF DEATH BY SEX IN CITIES OF 1,000

Classification No.	CAUSE OF DEATH. (After the Bertillon Classification Causes of Death, Third International Decennial Revision, Paris, 1920.)	Chilliwack.	Cranbrook.	Cumberland.	Duncan.	Fernie.	Grand Forks.	Kamloops.	Kelowna.
	VIII. THE PUERPERAL STATE.								
143	Accidents of pregnancy:								
	(*b.*) Ectopic gestation ..... F.	....	....	....	1	....	....	....	....
	(*c.*) Others under this title ..... F.	....	....	1	....	....	....	....	....
144	Puerperal hæmorrhage ..... F.	....	1	....	....	....	....	....	....
145	Other accidents of labour:								
	(*a.*) Caesarean section ..... F.	....	1	....	....	....	....	....	....
	(*c.*) Other surgical operations and instrumental delivery .... F.	....	....	....	....	....	....	....	....
146	Puerperal septicæmia ..... F.	....	....	....	....	....	....	1	....
147	Puerperal phlegmasia alba dolens embolus, sudden death ..... F.	....	....	....	....	....	....	....	....
148	Puerperal albuminuria and convulsions ..... F.	1	....	....	....	1	....	....	....
149	Following childbirth (not otherwise defined) ..... F.	....	....	....	....	....	....	....	....
150	Puerperal diseases of breast ..... F.	....	....	....	....	....	....	....	....
	IX. DISEASES OF THE SKIN AND CELLULAR TISSUE.								
151	Gangrene ..... M.	....	....	1	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
152	Furuncle ..... M.	....	....	....	....	....	....	....	....
153	Acute abscess ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
154	Other diseases of the skin and annexa ..... M.	....	....	....	....	....	....	....	1
	" ..... F.	....	....	....	....	....	....	....	....
	X. DISEASES OF BONES AND ORGANS OF LOCOMOTION.								
155	Diseases of the bones (mastoid and tuberculosis excepted) ..... M.	....	....	....	....	....	....	....	2
	" ..... F.	....	....	....	....	....	....	....	....
156	Diseases of the joints (tuberculosis and rheumatism excepted) M.	....	....	....	....	....	....	....	....
	XI. MALFORMATIONS.								
159	Congenital malformation (still-births not included):								
	(*a.*) Congenital hydrocephalus ..... M.	....	....	....	....	....	....	1	....
	" ..... F.	....	....	....	....	....	....	....	....
	(*b.*) Congenital malformations of heart ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
	(*c.*) Others under this title ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	1	....	....	....	....	....	....
	XII. DISEASES OF EARLY INFANCY.								
160	Congenital debility, icterus, sclerema ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	1	....	....	....	....
161	Premature—injury at birth:								
	(*a.*) Premature ..... M.	....	4	1	....	1	....	2	1
	" ..... F.	1	....	....	1	2	....	....	....
	(*b.*) Injury at birth ..... M.	1	1	....	2	....	....	....	....
	" ..... F.	1	....	....	....	....	....	....	....
162	Other diseases peculiar to early infancy ..... M.	....	....	....	....	1	....	1	....
	" ..... F.	....	....	....	....	....	....	....	....
163	Lack of care ..... F.	....	....	....	....	....	....	....	....
	XIII. OLD AGE.								
164	Senility ..... M.	....	....	....	....	2	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
	XIV. AFFECTIONS PRODUCED BY EXTERNAL CAUSES.								
165	Suicide by solid or liquid poisons (non-corrosive) ..... M.	....	....	....	....	....	....	1	....
	" ..... F.	....	....	....	....	....	....	....	....

POPULATION AND OVER, BRITISH COLUMBIA, 1926—*Continued.*

Ladysmith.	Merritt.	Nanaimo.	Nelson.	New Westminster.	North Vancouver.	Point Grey.	Port Alberni.	Port Coquitlam.	Port Moody.	Prince George.	Prince Rupert.	Revelstoke.	Rossland.	South Vancouver.	Trail.	Vancouver.	Vernon.	Victoria.	Balance of Province.	Total Deaths, Province.
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	2
1	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	2	.....	.....	3	9
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	2	5
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	.....	.....	.....	2
....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	8	1	1	2	15
....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	2	.....	2	1	7
....	....	....	....	5	....	....	....	....	....	....	....	1	....	....	....	3	1	4	3	19
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	.....	1	.....	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	1	2
....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	2	.....	.....	2	5
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	3	.....	.....	.....	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	.....	.....	.....	5
....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	4	.....	4	2	14
1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	2	.....	.....	1	5
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	2
....	....	....	....	....	....	....	1	....	....	....	1	....	....	1	....	.....	.....	.....	.....	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	.....	.....	3	7
....	....	....	1	1	....	2	....	1	....	....	1	....	....	1	....	7	.....	.....	3	17
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	2	.....	.....	3	6
....	....	1	....	3	....	....	....	....	....	....	....	....	1	....	....	8	.....	1	1	15
....	....	....	1	....	....	....	....	....	....	....	....	....	....	1	....	4	.....	1	1	9
....	....	....	1	2	1	....	....	....	....	1	....	....	....	2	....	3	.....	.....	11	21
....	....	1	....	1	....	....	....	....	....	....	1	....	....	....	....	1	.....	.....	11	16
2	....	3	....	5	3	....	....	....	....	....	1	2	1	1	2	33	.....	6	41	109
....	....	3	1	5	2	1	....	....	....	....	1	....	....	1	1	25	.....	4	26	74
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	4	.....	.....	4	13
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	3	.....	.....	1	7
1	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....	3	.....	2	19	29
....	....	1	....	1	1	....	1	....	....	....	....	....	....	....	1	3	.....	1	18	27
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	1	....	....	....	2	....	....	....	....	1	....	....	....	1	3	.....	7	26	43
....	....	1	2	1	1	....	....	....	....	....	....	1	....	....	....	4	.....	1	29	40
....	1	....	....	....	....	....	....	....	....	1	....	....	....	....	....	5	.....	1	1	10
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	1	1	.....	.....	3

CAUSES OF DEATH BY SEX IN CITIES OF 1,000

Classification No.	CAUSE OF DEATH. (After the Bertillon Classification Causes of Death, Third International Decennial Revision, Paris, 1920.)		Chilliwack.	Cranbrook.	Cumberland.	Duncan.	Fernie.	Grand Forks.	Kamloops.	Kelowna.
	XIV. Affections produced by External Causes—*Continued.*									
166	Suicide by corrosive substances	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	1	....
167	Suicide by poisonous gas	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
168	Suicide by hanging and strangulation	M.	....	....	1	....	....	....	....	1
	"	F.	....	....	....	....	....	....	....	....
169	Suicide by drowning	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
170	Suicide by firearms	M.	....	....	....	....	....	....	....	1
	"	F.	....	....	....	....	....	....	....	....
171	Suicide by cutting or piercing instruments	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
172	Suicide by jumping from high places	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
174	Other suicides	M.	....	....	....	....	....	....	....	....
175	Poisoning by food	F.	....	....	....	....	....	....	....	....
177	Other acute accidental poisonings	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
178	Conflagration	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
179	Accidental burns and scalds	M.	....	....	....	1	....	....	....	1
	"	F.	....	....	....	....	....	1	....	....
180	Accidental suffocation	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
181	Accidental absorption of deleterious gas, smoke, etc.	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
182	Accidental drowning	M.	....	....	....	....	1	1	....	....
	"	F.	....	....	....	....	....	....	....	1
183	Traumatism by firearms	M.	....	....	....	....	....	....	....	....
185	Traumatism by fall	M.	2	1	....	2	....	....	....	1
	"	F.	....	....	....	....	....	....	....	....
186	Traumatism in mines and quarries	M.	....	....	1	....	....	....	....	....
187	Traumatism by machines	M.	1	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
188	Traumatism by other crushings:									
	(*a.*) Railroad	M.	....	....	....	....	....	....	2	....
	"	F.	....	....	....	....	....	....	....	....
	(*b.*) Street-car	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
	(*c.*) Automobile	M.	....	....	....	....	....	....	2	....
	"	F.	....	1	....	....	....	....	....	....
	(*d.*) Aeroplane and balloon	M.	....	....	....	....	....	....	....	....
	(*e.*) Other vehicles	M.	....	....	....	....	....	....	....	....
	(*f.*) Other crushing	M.	1	....	1	3	....	....	....	1
189	Injuries by animals	M.	....	....	....	....	....	1	....	....
192	Starvation	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
193	Excessive cold	M.	....	....	....	....	....	....	....	....
196	Other electrical shocks	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
197	Homicide by firearms	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
198	Homicide by cutting and piercing instruments	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
199	Homicide by other means	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....
201	Fractures (cause not specified)	M.	....	....	....	....	....	....	1	....
	"	F.	....	....	....	....	....	1	....	....
202	External violence (cause specified)	M.	....	....	....	....	....	....	....	....
	"	F.	....	....	....	....	....	....	....	....

POPULATION AND OVER, BRITISH COLUMBIA, 1926—*Continued.*

Ladysmith.	Merritt.	Nanaimo.	Nelson.	New Westminster.	North Vancouver.	Point Grey.	Port Alberni.	Port Coquitlam.	Port Moody.	Prince George.	Prince Rupert.	Revelstoke.	Rossland.	South Vancouver.	Trail.	Vancouver.	Vernon.	Victoria.	Balance of Province.	Total Deaths, Province.
....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	.....	.....	.....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	.....	2
....	....	....	....	....	1	....	....	....	1	....	....	1	....	....	....	11	.....	.....	11	27
....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	1	1	5
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	3	5
....	....	....	....	1	....	1	....	....	....	....	....	....	....	....	....	1	.....	.....	1	4
....	....	1	1	....	....	....	1	....	....	....	....	....	....	....	....	8	.....	1	17	30
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	2	1	.....	2	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	5	10
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	3	.....	.....	1	5
....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	9	13
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	8	8
....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	1	3	.....	3	1	12
....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....	2	1	.....	5	11
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	3	.....	.....	.....	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	1	.....	.....	3	5
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
....	....	....	2	2	....	....	1	....	....	....	2	....	....	....	....	13	.....	.....	72	94
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	8	10
....	....	....	1	1	....	....	....	....	....	....	....	1	....	....	....	.....	.....	.....	6	9
1	....	....	....	6	....	1	....	....	....	1	2	1	....	1	....	21	.....	5	12	57
....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	6	.....	3	5	15
1	....	6	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	12	21
....	....	....	....	2	....	....	....	....	....	....	....	....	....	1	....	4	.....	.....	10	18
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	2	1	....	....	....	....	....	....	....	2	....	....	....	10	.....	.....	29	46
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	.....	2	.....	5
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	.....	2
....	....	....	1	4	1	1	....	....	1	....	....	....	....	2	....	13	1	5	14	45
....	....	....	1	2	....	1	....	....	....	1	....	....	....	....	....	9	.....	.....	.....	15
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	3	4
....	....	....	3	2	....	....	1	....	....	1	....	....	....	....	1	5	1	.....	46	66
....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	.....	1	.....	3	6
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	1	.....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	2	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	1
1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	.....	1	1	6
....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	1	1	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	.....	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	.....	.....	2	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	1	2
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	.....	.....	.....	2
....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	.....	.....	.....	3
....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	2	1	.....	14	18
....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	.....	.....	.....	1	2

CAUSES OF DEATH BY SEX IN CITIES OF 1,000

Classification No.	CAUSE OF DEATH. (After the Bertillon Classification Causes of Death, Third International Decennial Revision, Paris, 1920.)	Chilliwack.	Cranbrook.	Cumberland.	Duncan.	Fernie.	Grand Forks.	Kamloops.	Kelowna.
	XV. Ill-defined Diseases.								
204	Sudden death ..... M.	....	....	....	....	....	....	....	....
205	Cause of death not specified or ill-defined:								
	(*a.*) Ill-defined ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
	(*b.*) Not specified or unknown ..... M.	....	....	....	....	....	....	....	....
	" ..... F.	....	....	....	....	....	....	....	....
	(*c.*) Heart-failure ..... M.	....	1	1	....	....	....	....	....
	" ..... F.	....	....	....	....	1	....	....	....
	(*d.*) Syncope ..... M.	....	....	....	....	....	....	....	....
	Males	24	37	17	19	19	17	84	35
	Females	16	15	13	15	9	12	28	18
	Totals	40	52	30	34	28	29	112	53

POPULATION AND OVER, BRITISH COLUMBIA, 1926—*Continued.*

Ladysmith.	Merritt.	Nanaimo.	Nelson.	New Westminster.	North Vancouver.	Point Grey.	Port Alberni.	Port Coquitlam.	Port Moody.	Prince George.	Prince Rupert.	Revelstoke.	Rossland.	South Vancouver.	Trail.	Vancouver.	Vernon.	Victoria.	Balance of Province.	Total Deaths, Province.
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	2	3
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	9
..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	9
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	16	22
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	6
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
12	11	52	69	138	32	123	13	8	3	18	38	27	13	84	25	957	28	319	1,110	3,332
11	9	34	36	108	29	48	3	4	..	5	19	12	4	79	17	682	10	204	702	2,142
23	20	86	105	246	61	171	16	12	3	23	57	39	17	163	42	1,639	38	523	1,812	5,474

VICTORIA, B.C.:
Printed by CHARLES F. BANFIELD, Printer to the King's Most Excellent Majesty.
1927.

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PROGRESS OF TRIANGULATION CONTROL SURVEYS

TO ACCOMPANY ANNUAL REPORT OF THE SURVEY BRANCH, DEPT. OF LANDS, 1926

DEPARTMENT OF LANDS

HONOURABLE T. D. PATTULLO, MINISTER
J. E. UMBACH, SURVEYOR GENERAL

BRITISH COLUMBIA

Scale: 1/2,000,000
31.56 miles to 1 inch

Statute Miles: 0 20 40 60 80 100 150 200
Kilometres: 0 20 40 60 80 100 150 200

1923

TRIANGULATION SURVEYS under the control of the SURVEY BRANCH, DEPT. OF LANDS, B.C.:-

COAST TRIANGULATION CONTROL SURVEY

INTERIOR TRIANGULATION CONTROL SURVEY

TRIANGULATION SURVEYS under DOMINION GOVERNMENT CONTROL:-

GEODETIC SURVEY OF CANADA

TOPOGRAPHICAL SURVEY OF CANADA

CANADIAN GEOLOGICAL SURVEY

INTERNATIONAL BOUNDARY COMMISSION SURVEY

LEGEND

INDEX OF POST OFFICES

The Index Figures denote the geographical degree-quadrilaterals in which the Post Offices are located. In this indexing system the north east corner of each quadrilateral is used as the initial point of reference.

Example:—Prince George, 53-122, lies between the 53rd and 54th parallels and between the 122nd and 123rd meridians.

The scale of this map prevents insertion of certain post office names in the vicinity of Victoria and Vancouver and a few other localities which appear in the Index, but their positions have been indicated in the map by the post office sign and in the Index also.

YUKON TERRITORY

NORTH WEST TERRITORIES

PEACE RIVER

CASSIAR

OMINECA

CARIBOO

CHILCOTIN

NICOLA

YALE

KOOTENAY

TATLA LAKE

BABINE LAKE

STUART LAKE

FRASER RIVER

DIXON ENTRANCE

QUEEN CHARLOTTE ISLANDS

PRINCE RUPERT

VANCOUVER

VICTORIA

INSET
VICTORIA
SAANICH PENINSULA
SATURNA ISLAND
SATELLITE CHANNEL
SATURNA STRAIT

WASHINGTON
IDAHO
MONTANA
UNITED STATES

All distances shown on this chart are in nautical miles. A nautical mile=6080 feet

All distances shown on this chart are in statute miles

All distances shown on this chart are in statute miles

To obtain the distance given in any one of these charts between any two cities, etc., read southward from the higher name to meet an imaginary line drawn westward from the other.

Example:—Sydney to Yokohama 4,140 miles.

Longitude West of Greenwich

January 1st, 1923

MAP No. 1-J

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3 0112 124958361